puter Literacy:
nition and Survey Items for Assessment
chool

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ractor.

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As part of Secretary Terrell H. Be
technology, the National Center for Edu
the Education Technology and Science St
Educational Research and Improvement (C
multi-year effort to facilitate the sys
computer use and computer literacy in e
education. The project for the firs
contract with Educational Testing S
Research Oganization (HumRRO), and Inst
This volume is the product of the first

The purposes of this initial proje
of a definition of computer literacy, a
terminology, a short bibliography of co
questions on the use and application of
are presented here. The pool of questi
groups addressed to superintendents, pr
in elementary and secondary schools.

As a critical element of the proje
recognized experts in computer use and
convened. They provided expertise in d
identifying issues, and ultimately revi
materials that were developed. The pr
most notably the pool of questions, lie
tise that went into their development.

States, local school districts, ed
other groups may elect to use some of t
insight into the status of computer lit
education community. If so, they shoul

(1) The pool of questions is large. N
be expected to respond to all of t
must be made.
(2) The choices from the pool of the m
included in a particular questionn
purposes of the research. Users c
define explicitly the purposes of
aspects of computer literacy they
(3) The questions have not been subjec
Consequently, almost no informatio
performance of the questions, i.e.
validity, or their relationship to
(4) Computer literacy is a multifariou
are warned against trying to add t
different questions in an attempt

(5) All of the questions in this report are se
self-assessment items, e.g., "How many mic
school have?" or, "How often do you use th
when you need information?"

(6) A further set of questions designed to ass
of computers was also developed. These so
items" are available upon request as speci
Although they will eventually be valuable
enhance the value of the self-report queet
items currently do not cover many importan
computer literacy.

This report provides an essential first st
effects of the information revolution on the Na
Further actions are needed, such as the develop
of questions that might be used in comparable s
testing of these questions. An actual survey u
would then yield useful, comparable information
with, and the potential of, computers in the sc

NCES will continue to evaluate and refine
developed in this project through its own surve
others who wish to conduct surveys to assess th
education.

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Pau
Chi
Lea

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Ms. Lorraine Luciano (ETS), Mr. Kenneth Rosenb

Table of Conte

Introduction

American education is being confronted b
chsnges occurring in the larger society. The
referred to as the "information revolution"--
by rapid developments and reduced costs in el
ogies and global information networks. The m
this revolution for education has been the in
computers into elementary and secondary schoo
From fall 1980 to spring 1982 the number of m
instructional use by public school students t
schools and 60% of secondary schools reported
(Wright, 1982). With the increasing cspabili
their declining costs, it is not unreasonable
far in the future when all elementary snd sec
access to a computer on a regular basis.

The potential that computers hold for edu
programmed, computers can facilitate the teach
csn be used as tools in most subject mstter a
administrative purposes. As an object of stud
students for a wide variety of new careers in
Technology Assessment, 1982).

Despite the potential utility of computer
apparent speed with which schools have acquire
tion regarding computer applicstions in elemer

retary Bell's initiative on educational technol
Education Statistics (NCES) and the Education
ff (ETSS) of the Office of Educational Researc
tiated a project to facilitate the systematic g
puter use and computer literacy in elementary a
purpose of this project was to develop a pool
used in surveys to provide data that would enab
ion agencies, school administrators, teachers,
ustry to make better informed decisions regardi

1. Curriculum planning and implementation i
   schools;
2. Design of inservice and preservice train
   and administrators;
3. Development of educational computer equi
   computer-related learning materials;
4. Evaluation and selection of computer equi
   learning materials.

Although the number of schools that hav
student-related activities has risen dramat
little is known about who are using the comp
they are being used. Recent surveys of comp
schools indicate that the primary uses of cc
programming in BASIC, general "computer awar
and-practice applications (Becker & Fennesse
Beyond such general types of knowledge, litt
uses of computers made by administrators, te
over, much of the data that have been gather
differently that little cumulative knowledge
these problems and help provide more compreh
information regarding the types of uses of c
their application in schools, the Department
the preparation of a pool of questions that
instruments with these objectives.

The pool of questions--referred to here
three different types. The first type of it
asks the respondent about his or her compute
experience, and use. The second type of ite
whose purpose is to objectively validate the
type of item is the inventory item that seek
computer-related resources in the district,

The items themselves are addressed to four ty

- School district superintendents
- Elementary and secondary school principals
- Elementary and secondary school teachers
- Elementary and secondary school students

The pool of items can be used by federal, sta
ncies and researchers as a starting point in de
ssing the status of computer literacy in schoo
items themselves should be relevant to conditi
il 1990. Technological changes, of course, may
specific items.

The items are designed to assist in gathering
o to answer questions such as the following:

- To what extent have goals for computer lit
- In what ways are computers being integrate
- What is the quality and quantity of comput
  the schools?
- To what extent and in what ways are superi
  teachers, and students computer-literate?
- What are superintendents, principals, teac
  with computers?
- At what grade levels are computers being i
- How do superintendents, principals, teache
  up with computer-related developments and
- How are equipment, software, and curricula
  ated and selected?
- How accessible are appropriate computer eq
  learning materials to administrators, teac

- What are the policies on computer acquisiti
- How are resources allocated within a distri
- What programming languages are being taught
- What computer-related training is being pro
  whom?
- How are schools evaluating their computing
- Who makes decisions on such matters as curr
  selection, teacher training, software select
- Does the use of computers vary between diff
  and communities?
- What are the relationships between computer
  and computer access outside of school?
- How are parents and communities involved?
- What resources are needed and lacking in or
  achieve their goals?

The nature and extent of computer-related acti
y in schools and school districts, as well as
signing the items, the assumption was made that
would be conducted several times during the ti
providing information on changes and trends.

rganization

This project was the joint effort of Educatic
ETS) of Princeton, New Jersey, the Human Relatio
HumRRO) of Arlington, Virginia, and Instructiona
f Minneapolis, Minnesota. ETS, the prime contra
urvey development expertise, and HumRRO and ICI
xpertise in the area of computer use in educatio
f the project was to identify members of a ten-p
ould guide the project throughout its course.

The Advisory Panel was selected to include r
ollowing groups:

- elementary and secondary teachers
- administrators
- chief state school officers
- the computer industry
- publishers
- professional aocieties in computing
- post-secondary teachers of computer scien

The Advisory Panel was also selected for reg
ith members from the Far West, the Northwest, th
nd the Northeast. Members of the Advisory Panel
ducation, mathematics, engineering, physics and
l have been actively involved in computer-relate
e Advisory Panel members were:

Dr. William Atchison
Professor, Department of
Computer Science
University of Maryland
College Park, Maryland

Dr. Joseph Caravella
Director of Professional Services
National Council of Teachers of
Mathematics
Reston, Virginia

Dr. Sylvia Charp
President, American Federation of
Information Processing Societies, and
Past Director of Instructional Systems
School District of Philadelphia
Philadelphia, Pennsylvania

Dr. K. Fred Daniel
Director, Strategy Planning
and Management Information Systems
Florida Department of Education
Tallahassee, Florida

Dr. Arthur W. Luehrmann
Computer Literacy, Inc.
Berkeley, Californis

Recent books on computer use in educa

panel include Computer Literacy: A hands-

and H. Peckham (Webster Division, McGraw-H

Power by J. M. Moshell (Gregg/McGraw-Hill,

Classroom by D. Moursund (John Wiley & Son

by J. M. Rice; and Learning with Logo by D

1983).

During the course of the project, the

arding the definition and conceptual structure o

items as they were developed, and the various r

course of the project. Their substantive input

ctioning of the project.

ject Procedure

The study included four major activities: def

eloping a conceptual structure for computer lite

ondary education, writing items to survey and as

field testing the items. Each of these activit

following sections.

Defining Computer Literacy. Computer literacy

ely discussed, but whose meaning has rarely been

adequately reflect the diversity of meaning attr

eracy," a review of previous definitions, comput

lines, curriculum guides, and general goals for

oola was conducted. (See the Reference section

ations of materials reviewed.)

Based on this earlier work, a draft definitior

prepared, reviewed, and refined by the Advisory

inition of computer literacy agreed upon by the

"Computer literacy may be defined as whatever
know and do with computers in order to functi
our information-based society.

Computer literacy includes three kinds of comp
knowledge, and understanding. It includes:

1. the ability to use and instruct computers
solving problems, and managing information

2. knowledge of functiona, applications
tions, and aocial implicationa of co
technology; and

3. understanding needed to learn and ev
and social isaues as they ariae."

This definition highlighta the fact that
and understanding will vary from person to pe
from time to time. The term "computer literac
the apecialized knowledge and skilla that are
computer-related fields aa computer acience, c
engineering.

The definition of computer literacy uaed
inherent in the definitiona of computer litera
example, Ronald Anderson and Daniel Klaasen (1
literacy aa:

"Whatever understanding, akilla and attit
tion effectively within a given aocial
indirectly involves computers."

David Mouraund (1982) haa proposed that:

"Computer literacy is a working knowledge

Arthur Luehrmann (1982) haa reasoned that:

"If you can tell the computer how to
want it to, you are computer literat

The Layman's Guide to the Uae of Computer
the Association for Educational Data Syatema (
that computer literacy

"is being considered a basic akill ar
properly in our society. The abilit
information, aolve problems, communi
help understand the change's that are

Because computers are simply tools for handling
problems, some have argued that the idea of "comp
replaced with "information handling literacy." I
example, proposed national goals for "informatio
Nevertheless, the phrase "computer literscy" has
mation technology know-how; therefore, it is prob
to retain the phraae in spite of its deficiencie

Developing a Conceptual Structure. The deve
framework for computer literacy aa it is applied
teachers, and students in elementary and secondar
a review of computer literacy courae outlines, cu
general goala for computer literacy. This frame
domains of computer literacy skills and knowledge

1. Administration

   Adminiatering computer-related policies
   school diatrict or school. Includes auc
   computer literacy goals for students; es
   for evaluating software; and assigning
   training.

2. Teaching

   Teaching with or about computers. Inclu
   ing students how to uae computer softwar
   issues with students; assessing students

3. Uaing Programs

   Using suitably programmed computers as a

equipment; selecting the appropriate

using a graphics program to graph dat

using a word processor to aid in writ

4. Developing Programs

Developing procedures for solving a pr

procedures in a form the computer can

Includes such tasks as defining a prob

commands and instructions to the compu

a computer program.

5. Analyzing Applications

Knowing capabilities and limitations o

used for various purposes. Includes s

people in the school district use comp

deciding whether to use s computer to

6. Social Issues

Understanding social issues related to

Requires awareness of issues such as p

job requirements, consumer concerns, s

"computer errors." Involves identific

parties in conflict.

7. Concepts and Terms

Understanding of the fundamental conce

computers, that are needed to use comp

comfortably. Examples include underst

atored programs; recognizing common wa

The Advisory Panel [illegible]
system administrators, elementary and secondary s
tary and secondary school teachers, and elementar
students.

For each domain, brief descriptions of compu
statements") that sdministrators, teachers, or st
able to perform were developed. For example, one
teachers was to "evaluate and select computer pro
to use." These task statements were derived from
and overall, more than 250 task statements were p
Panel also rated each task statement for its impo
group.

Writing Items. A preliminary set of specifi
ment was obtained from the list of 250 task state
of the conceptual framework, and from an independ
developed instruments designed to assess the stat
These instruments are cited in the references of
instruments and the draft task statements, draft
items were prepared.

A second set of specifications for item deve
a list of substantive questions raised by the Adv
tions clarified the need to develop items to inve
equipment, software, training, curricular materi
available to individuals, classrooms, schools, ar

Three types of items were developed: (1) survey items including (a) self-assessment item reports his or her own level of knowledge or sk for which the individual describes his or her o of using a computer), and (c) expert report ite serves as an informant (e.g., he or she indicat her district has policies related to computers) validation items, which are multiple-choice que literacy domain; and (3) computer-related resou Computer literacy survey items snd computer rel questions were developed as checklists, ratings "Yes-No" questions.

Preliminary versions of all items were rev over multiple iterations, by the project staff developing and reviewing items, attention was d and accuracy of the content, format, style, and most items have a sixth-grade reading level, al some computer-related technicsl words that migh average sixth-grade student.

Field Testing. The purpose of the field t tive evaluation of the preliminary survey and v the questions had been developed through severa by technical experts, they had not been tried o rincipals, teachers, snd students who were to roup. The evaluation focused on the responses

Eight school districts in New Jersey, Pennsyl
articipated in the field test. Individual interv
th the superintendent, a secondary and an elemen
secondary and an elementary teacher. Students w
f ten, each of whom responded to a different set
em, however, was answered by only eight elementa
condary students.

The data from the field test were subjected t
antitative analysis; results of these analyses w
te revision of the items.

The last four sections of this report con
esource inventory items that may be used in c
he validation items are not included in order
ndividuals wishing to obtain copies of the va
ollowing the instructions on page 18.

urvey Items

The pool of survey and resource inventory
nto four groups of questions appropriate for
eachers, and students. The same or similar it
ne set of items, with similar forms adapted fo
r example, an item asking whether or not the
computer program may appear identically worde
n item asking about computer-related policies
irecting the superintendent to answer about d
answer about school policies and the teacher
olicies. The Index of Items provides a listi
nd indicates which items appear in each of the
ndicate items containing parallel, respondent-

Although the sets of items do not constitu
ents, the items are arranged in a logical orde
elated to each domain are grouped together, an
rder listed above, beginning with "Administrat
Resource Inventory." The number of items appr
f respondent, by domain, are shown in Table 1.

n multi-part questions that would be administered
uestions are indicated in the Index as a range o

Table 1: Item Pool of Computer Liter
Appropriate for Each Respondent Gr

Survey Questions	Superintendent	Res Pr
Administration	59	
Teaching	18	
Using Programs	105	
Developing Programs	6	
Analyzing Applications	5	
Social Issues	46	
Concepts and Terms	5	
Resource Inventory	4	
Total	248	

The item pool for each respondent group is m
urvey instrument should be. To use these items,
rawn and one or more instruments developed, as f

1. Select those questions from the appropri
purposes of your survey. For example, y
some items from each of the survey, reso
validation type items. Within the survey
select some items from each domain or to
one or more domains.

2. Determine how long you wish the survey t
adults and secondary school students will
minute for up to 60 minutes; students in
at approximately the same rate can be sur
minutes. Questions in matrix format will
each subpart should be counted as a quest
administration time.
3. Determine what demographic or identifying
need for the analysis and interpretation
information might include auch respondent
age, grade, gender, or ethnic identity, o
characteristics as size or location.
4. Construct a draft survey instrument that
any additional questions for obtaining th
fying information, a short introduction t
to the survey, directions for answering t
information regarding to whom and where t
returned when the respondent has complete
5. The advantage of using items in this pool
data may be collected in multiple locatio
of specific items defeats this purpose.
necessary, however, they should be made.
6. Pretest the instrument you have developed
target population, and revise the instrum
the pretest results.

For detailed information on any of the prec
eferences on test and survey instrument develop

alidation Items

Questions were developed for use by those w
elf-report questions in the survey. For exampl
hat he or she had written many computer program
hould be able to correctly answer a question re
imple BASIC program. For the field test, self-
tems dealing with the same topic were administe
he 420 correlations between self-report and val
omputed, 31% were statistically significant at
imes more than would be predicted by chance. S
espondent sample was extremely small, the degre
he validation and self-report items may actuall

In order to keep the validation items secur
um use to researchers, they are not included in
e obtained by writing for:

1983 Computer Literacy Validati
National Center for Educational
Attention: Brown Building, Roo
400 Maryland Avenue, SW.
Washington, DC 20202

A statement of nondisclosure must be agreed
ne items.

The validation items do not constitute a te
f the domains, and should not be regarded as an
omputer literacy. Their purpose should be only

self-report questions on the survey. The psyc

hese items are unknown, as the items have not

sizeable respondent group and statistics have

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1982.

access: Used either as a verb or noun
system or the acquistion of data from a s

advanced computer programming: Courses i
programming skills and solve more comple
These might involve, for example, complex

ALGOL: ALGOrithmic Language. A high lev
may be precisely presented to a computer

algorithm: A defined process or set of
of a desired output from a given i
algebraic/logical steps to calculate
rules.

analog: Representation of information
continuous manner with respect to
representation of information.

APL: A high level programming language,
used in conjuction with statistical datab

Apple DOS 3.3: A Disk Operating System fo

application: Use of a computer for a p
application.

application package: A program, or se
particular application, or task (as in
data analysis).

assembly language: A programming langua
a single machine language instruction.
code.

authoring language: A high-level compute
by authors or writers as distinguished
are often written in an authoring languag

authoring language programs: Computer pr
called an authoring language. Somet
instruction.

back-up copy (of program or file): A se
form, which allows a user to retain info
or damaged.

BASIC: Beginner' Al -purpose Symbol

mputer hardware: The essential mechanical,
al devices which go to make up a computer.

onym for binary digit. Represents the smal
onding to, eg 0 or 1; `on' or `off'; `signal' o
formation as a series of bits.

ee printed circuit board.

programs: Computer programs used to assist in
. They involve such operations as file proces
g, procedures for operating or quality control,

group of adjacent bits, usually 8 bits, operati
phabetic character.

puter-Assisted Instruction): Instruction in whic
ning machine'. The computer presents inst
s, evaluates student's progress, tailors instruc

card of standard size, thickness and shape
ions into a computer.

ch: A device which perforates cards in a spe
either of a computer, or of a user at a
ions which give the computer instructions.

der: A device which permits the sensing of inf
erts this information into electronic messages.

: A portable container for film or magnetic
programs or data into a computer.

ray tube (CRT) An electronic display device,
tube, used to display information including gra
s a "display" or "video display."

puter-Based Instruction): Same as CAI.

rocessing unit (CPU): The "brains" of a compu
mmetic, logic and control operations.

escription of a single integrated circuit. I
and 5cm in length, and having between 6 and
normally found in computer systems is called a

mputer-Managed Instruction): Some applicatio

COBOL: Common Business Oriented Language. desiged especially for manipulation of busi related to ordinary English words.

compile: To translate a high level language instructions for the computer.

compiler: A computer program which replaces c instructions, usually called subroutines. compiling is a translated and expanded ver **interpreter**

Compuserve: An organization that pro telecommunications. Sometimes referred to as

computer: An electronic device which receives operates on them according to a program, and

Computer-Assisted Instruction: See "CAI."

computer awareness: Introductory-level k capabilities, how they work, limitations, app

Computer-Based Instruction: See "CBI."

computer coordinator: In a school or school computer-related activities such as equ computer-related training of teachers, or com

computer education: Education about compute data processing, or other computer-related su

computer entry: An input to a computer from a

computer error: A status word indicating that and awaits a correction. Informally, mist computer system or application.

computer interaction: The interaction of a c devices such as a keyboard or joystick and th display.

Computer-Managed Instruction (CMI): see CMI

computer programming: The development of a computer to carry out a desired sequence normally the solution of a problem.

Computer-related Learning Materials: Texts, t

subjects.

r specialist: In a school or school distri
izes in computer-related educational curricula o

r science: The entire spectrum of theoretical
ed with the development and application of compu

ng: A generic term for all mathematical and logi
ng to precise rules of procedure.

program (microprocessor): A specific designed
ides the CPU through the various operations. M
ntly stored in ROM memory where it can be acce
ing operations.

er: A device which converts data from one physi
card to magnetic tape.

bbreviation for Control Program/Microcomputer.
riety of microcomputers.

breviation for central processing unit.

breviation for Cathode-Ray Tube.

A highlighted mark appearing on the computer
or underscore character which indicates wher
d will be recorded.

Groups of characters (alphanumeric or othe
value or condition. Data provide the buildin

e: A store of data on files which can be made
esigned for operation in connection with an info

e **programs:** Computer programs used to creat
e, and to retrieve information from the data bas

mmunication: The transmission and reception
magnetic signals to a computer.

mmunication equipment: The data communication
st five elements: a transmitter or source of
serial interface; a communication channel or
tted information. A data communications interf
ry serial data compatible with the communicatio

try: The writing, readin, or postin, to a medi

ata processing: Includes all clerical, arithm
ata. Data processing in the context of info
he use of a computer for these operations.

ata storage: The processes of storing informati

ata terminal equipment: Any piece of equipmen
egins or ends.

ebug: Isolate and correct errors in a computer

lete, a program: To **purge**, or erase a program

isk drive: A device which reads from, or writes

ocumentation: Written information about hardwa
s that contained in a user's guide.

rill-and-practice: A class of computer appl
resents questions or problems, accepts and e
ives some kind of feedback to the student.
tudents' level of ability, speed, or interests.

diting, text: Facilities designed into a comput
eyboarding of textual copy without regard for
ublication. Once the copy has been placed in c
nd justified into any required column width
e also **word processing.**

DUNET: A computer-and-communications network se

ectronic chalkboard: Teacher's use of a compu
imilar to a chalkboard, i.e. to present
onstrate a concept.

ectronic data services:

lectronic mail: A general term covering t
istribution, of messages. Unlike a telephon
ansmitted at one time, stored in a computer an

ectronic theft: Theft or illegal use of inform

mulator: Hardware or software which makes a sy
oftware, as another system. For example, a
mulate a telex, or a computer of one type may
ifferent type of computer.

A section of a computer record which is des
ied information. For example, in a bibliograph
the data positions where the dates of publica
ed.

An organized structured, and named collection of

anagment program: A computer program which assi
fying data files, and enables them to be called f

disk: A disk made of a flexible material,
ic surface onto which information is encoded m
ually either 5 1/4 inches or 8 inches in diameter

disk drive: See "disk drive."

art: A chart to represent, for a problem, the
, equipment, methods, documents, machine instruct

statements: A predetermined arrangement of
e, to: the layout of a printed document; the arr
der of instructions in a program. It can also r
ds available at a keyboard.

N: An abbreviation for FORmula TRANslator.
ge extensively used for scientific and mathematic

on keys: Specific keys on a terminal keyboard wh
es of commands at a single key stroke. These ke
user, or come already programmed.

addle: An input device which is popular to co
(or cursor) on the video monitor.

cs plotter: A device which provides hard-copy o
y produced by computer.

cs programs: Programs or routines that produce
representations of data. They range from a
graph on a teletypewriter to complex systems
dimensional displays, complete with legends--e
and fonts.

cs tablet: A device for inputting graphics.
charts or free-hand drawings can be created, an
lay screen. The tablet can also be used to m
it to a storage device for subsequent recall, o

disk: A circular metal plate with magnetic
ously rotated for reading or writing by means

rd disk drive: See "disk drive."

rdware: The mechanical, magnetic, electronic ar
ke up a computer. Central processing units,
sk drives are examples of hardware.

gh level programming language: A computer langu
notation with which they are already familia
nt, +, etc. Each natural language instruction
chine code instructions.

formation retrieval: Technology and methods
arching through large quantities of information

put: Information received by a computer, or it
the computer.

struction: A command to a computer to carry out

structional games: Game-like computer program
rpose or intent. May involve competition be
ween two or more students.

em: A unit of information relating to a single
hin a database.

terface: A general term to describe the connect
stems. Most frequently refers to the hardware
gether two processing elements in a computer sy

ternal memory capacity: The amount of informa
vice has direct access.

terpreter: A computer program that translate
nguage to machine code and executes it.

ystick: A lever whose motions control the mov
ed to write on a VDU.

yboard: A device equipped with an ordered ar
erated to encode data or instructions. A
yboard.

nguage: A set of representations and rules by w
thin, and between, computers, or between comput

nguage interpreter: A general term for any
utine that accepts statements in one lan
atements in another language.

a user and a computer.

list: 1. A series of records in a file. 2. the a
(without performing any additional processing).

load: To enter information, or a program into a comp

log on/off: To initiate, or terminate on-line intera

Logo: A high-level computer programming language or
learning environment for children. Used to teach
thinking, recursion, debugging, graphing.

machine readable form: Capable of being read by a co

magnetic tape drive: See "tape drive."

math or statistics computation: A computer program
statistical operations.

memory: A device into which information can be
computer when required.

memory location: A specific position in computer mem

microcomputer: A small (desk top) computer which
processing element. Often used loosely to refer to

modem: An abreviation of modulator-demodulator.
digital signal (generated, for example, by a comput
modulation. In this form, the signal can be t
telephone line. The received signal can be reconver
the same device.

modulation: The addition of information to an electr
wave).

monitor: Hardware or software used to monitor the ac

mouse: A device which an operator can move over
tablet. Its position is recorded by the computer, a
and illustrations about.

music board: A Printed Circuit Board that contains
and music in a computer.

MS-DOS: A disk operating system that runs on IBM
computers that are compatible with the IBM PC.

ne: Any use of equipment to interact direct
mputer.

ting system: Software that manages the com
wing the user to run programs and control ope

cal scanner: A special optical device which
generates analog/digital signals which are
hronized with the scan, the primary purpo
tal representations of printed or written dat

ut: Information transmitted by a computer,
ide world. It may, for example, be in the
s or paper tape.

ut capability: The number of unit loads that
uit.

stem: An operating system available for sever

aged computer program: Computer program
ercial publishers, for distribution and sale.

r tape punch: A device which punches paper ta

llel Interface: A specific plug-and-socket
uter system, like a printer and the pro
eties, serial and parallel. A serial inte
her, serially. A parallel interface uses
y each bit in a character simultaneously
t-bit pattern to encode one character, the
t wires, each carrying one bit. Parallel i
ver eight bits at a time instead of one.

AL: A language designed to enable teaching
ipline and to do systems programming. Ba
asizes aspects of structured programming.

word: A group of characters which a user inp
he system. Used to protect a computer syste

OS: See MS-DOS.

t: An original or test program, project, or
uage used for computer-assisted instruction.

: A place of entry to, or exit from, a centra

ter: An output device which converts electronic s

essing, data: See "data processing."

am: An ordered list of instructions directing red sequence of operations. The objective is lem.

ram file: 1. A flexible, easily updated referenc the entire software library. 2. A named fil inguished from a data file.

rammer: 1. One who prepares programs for a ares instruction sequences without necessarily iled codes. 3. A person who prepares prob harts and who may also write and debug routines.

ramming language: A specific language used to e are hundreds of programming languages.

ocol: A set of conventions between communicating ents of messages to be exchanged.

ocol emulator: A software package that allows a a variety of foreign (nondigital) vendor unication protocols of the foreign host.

e: To erase data from a file.

Report-Program Generator. A high-level program rts from computer data files.

e check: On some systems, this seeks the prese es or entries that data must fall within. ists of a low- and a high-data value in table loc

/write head: An electromagnetic device used to etic storage device such as a disk or tape.

rds: A unit, or set of data, forming the basic el

eational programs Computer programs designed for

ne, a program or file: Instruct a computer to g name.

nemory: Read-Only Memory. Can not be erased or m

1. One xecution of a computer routine, program

save: To store a record, file, or prog
semi-permanent storage medium.

screen: 1. A display device used to view c
presentation of information on a screen, analog

Serial (RS-232) interface: The interface betwe
terminal equipment, and standardized by Elect
standard RS-232.

serial interface: Serial interfaces are wid
computers; they are technically simpler than p
over longer distances. See also "parallel inte

simulation: The representation of the behavior
phenomena by computers, models, or other equipm

software: The instructions, programs, which are
computer. Distinguished from **hardware.**

software package: A generalized program, or se
requirements of a number of users.

spreadsheet: A class of computer programs tha
formulas in a "spreadsheet" format, i.e. in ro

storage: 1. A storage device, or the medium o
The process of storing information.

stylus: 1. Synonym for light pen. 2. Device u
tablet to input and manipulate graphical inform

system: An organized set of components which in

system utilities: A system or program that is
or utility functions such as copying or printin

tape: A strip of material that may be punc
magnetic or optically sensitive substances, an
output.

tape drive: A device that moves tape past
information on the tape.

telecommunication programs: A program which pe
of signals, writing, sounds, or intelligence o
beam, or any other electromagnetic means.

e editing of text on a computer. It may be ca
, from a mainframe with appropriate software to

organization that provides computer and informa
etimes called an "information utility."

ing system for Tandy Radio-Shack computers.

Option, an operating system that runs on mainfr

ss of instructional computer programs that perf
utor, i.e. presents information to the learner,
luates student answers, and tailors instructio
s of the learner.

ogramming operating system developed at Bell L
cated software and text-developing utilities.

on who is using a computer. 2. The person or
in a time-shared computer system for the purpo
tion by the computer.

ss: A system with characteristics, or style,
leasant to interact with the computer.

ganizations made up of users of various computin
ortunity to share knowledge they have gained in
and exchange programs they have developed.

ory System.

lay unit. A device, like a television scree
puter. See also "screen."

r: A device used for the production of speech

Handling of text via computer. Includes such
text electronically, formatting documents, and

program: A computer program used by a pers
, editing, revising, formatting and printing te
s, or books.

ing system that runs on some microcomputers,
system called UNIX.

Questions About Administering Computer-Relate

Superintendent	Principal	
* 1	* 1	*
* 2	* 2	
* 3	* 3	
* 4	* 4	
* 5	* 5	
6	-	
-	6	
* 7	* 7	
-	8	
* 8	* 9	
* 9	* 10	
* 10	* 11	
* 11	* 12	
* 12	* 13	
-	14	
* 13	* 15	
-	-	
* 14	* 16	*
-	17- 37	
* 15	* 38	*
16	39	
* 17	* 40	
* 18	* 41	*
* 19- 29	* 42- 52	
* 30	* 53	
* 31	* 54	
* 32- 33	* 55- 56	
* 34- 36	* 57- 59	
* 37	* 60	
* 38	* 61	
-	62	
39- 47	63- 71	
48- 59	72- 83	

Questions About Teaching With or About Comput

Superintendent	Principal	
-	-	
-	-	
-	-	

tendent	Principal	Teacher
	-	36
	-	37
	* 84-109	* 38- 63
	110-124	-
68	125-133	64- 72
74	134-139	73- 78
	140	-
	141	79
	*142	-
	143	-
	-	80- 81
	-	82
	-	83

bout Using Computer Programs

tendent	Principal	Teacher
	144	84
	-	85
	-	86- 87
105	*145-171	* 88-114
29	172-195	115-138
	*196	-
41	197-207	139-149
	-	150-159
151	208-217	160-169
	*218	*170
	219	-
	220	-
	-	171
	-	*172
	-	173
	-	-
	221	174
172	222-238	175-191
	239	192
	240	193
	241	194
	242	195
181	243-247	196-200
	-	201
	248	202
	-	203

5. Questions About Developing Computer Program

Superintendent	Principal
183	249
184	250
185	251
186	252
187	253
188	254
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-

6. Questions About Analyzing Computer Applicat

Superintendent	Principal
*189	*255
*190-191	*256-257
*192	*258
*193	*259
-	260

7. Questions About Understanding Social Issues

Superintendent	Principal
194-214	261-281
*215	*282
*216-224	*283-291
*225-227	*292-294
*228	*295
*229	*296
230	297
*231	*298
232	299
*233	*300
234-239	301-306

tions About Understanding Computer-Related Concep

Superintendent	Principal	Teacher
240	307	273
241-244	308-311	274-277
-	-	*278
-	-	*279
-	-	*280
-	-	*281
-	-	*282

tions That Inventory Computer-Related Resources

Superintendent	Principal	Teacher
-	312	-
*245	*313	-
-	314-320	-
-	321	-
-	322	-
-	323	-
-	324	-
-	325	283
-	326	-
-	-	284
-	327-332	-
-	333-336	-
-	337	-
-	338	-
-	339-347	-
-	348-350	-
-	351	-
-	352	-
-	353-356	-
-	357-360	-
-	361	-
-	362	-
-	363-372	-
-	373	-
-	374	-
-	375	-
-	376	-
-	377	-
246-248	-	-

COMPUTER LITERAC

QUESTIONS FOR SUPERINT

ESTIONS ABOUT ADMINISTERING COMPUTER-RELATED PO

1. Does your district have written goals for a literacy?

_____Yes, in place

_____Yes, in progress

_____No

_____Don't know

2. If yes, which goals have been eatabliahed i computer education? Check all that apply.

_____Computera to be used as a functionsl dents in a wide variety of subject ar

_____Computers to manage the educstional p individual prescriptions to each atud

_____Computer science courses to be offere

_____Data processing coursea to be offered

_____Computera to be used in conjunction w

_____None of the above

_____Don't know

3. Does your diatrict have written policies cc utilization?

_____Yes

_____No

_____Don't know

4. If yes, which of the following areas do cover? Check all that apply:

_____ Integration of computer-related le existing curricula

_____ Sharing of equipment

_____ Development of computer software

_____ Standardization of hardware and so

_____ Loaning computers to students or s

_____ Graduation requirements

_____ Recreational use of computers

_____ Not applicable

5. What has been instrumental in developing activity in your district? Check all th

_____ Business/community initiative or s

_____ University/college assistance

_____ Federal funding

_____ State assistance

_____ Local appropriations

_____ Administrative initiative or suppo

_____ Teacher initiative or support

_____ Student initiative or support

_____ Local board policy

_____ Parent initiative or support

_____ We have no computer-related activi

6. If you have no computer-related ac
factors have delayed your district
Check all that apply:

_____Cost factors

_____How diatrict budgets are org

_____Need for more planning

_____Equity iasues

_____Active opposition

_____Lack of trained personnel

_____Lack of adequate software

_____Lack of adequate hardware

_____All of the above

_____Other _____

7. Which, if any, of the following co
Check all that apply:

_____Introduction to Computing

_____Computer Science

_____Computer Programming

_____Word Proceasing

_____Data Proceasing

_____None of these coursea

8. Does your district have specific t
computer-based systems and/or curr

_____Yes

_____No

9. Does your district have a special procur
computer equipment?

_____Yea

_____No

_____Don't know

10. Doea your diatrict have apecific policie
ing parental input to computer-related d

_____Yes

_____No

_____Don't know

11. In what way are parent groups involved w
diatrict? Check all that apply.

_____Providing organized community aupp

_____Funding hardware or aoftware purch

_____Serving as teacher aida

_____Helping with planning for computer

_____Using achool computers at home wit

_____Writing computer programa

_____Fund raising for computer-related

_____Providing individual aupport

_____Other _____

12. Has some non-achool group, such as a c
sponaored a project that supported the
district?

_____Yes

_____No

_____Don't know

13. For which of the following items are t
your district? Check all that apply:

_____Computer hardware (keyboarda, mo
drivea, printers, graphic tablet

_____Computer software and couraeware

_____Teacher training related to harc

14. How are computers used to support inst
Check all that apply:

_____Uaed for teaching and learning

_____Used for instruction in programm

_____Used as a tool in various subje

_____Used for computer-managed instr

15. In your district, are there specific rules following? Check all that spply:

_____Protecting equipment from damage

_____Protecting equipment from loss

_____Destroying snother person's data

_____Disrupting the operstion of the compu

_____Scheduling or sharing equipment

_____Scheduling or shsring programs

_____Copying copyrighted programs

_____Copying other students' graded comput

16. When school is closed either for the summer what is your policy regarding computers? C

_____Send computers home with students

_____Allow teachers or administrators to b

_____Distribute them to other selected ind

_____Lock them up for safekeeping

_____Lesve them in their assigned location

_____Use them for school or district train development

_____Send them out for msintenance

_____Use them in summer camp

_____None of the sbove

17. What procedurea does your distri
computer-related learning materi

_____An evaluation committee re

_____A computer coordinator or
materials

_____We rely on saleapersons' r

_____We rely on external evalua
education departments

_____A aupervisor or adminiatra

_____A media apecialiat reviews

_____We rely on teacher recomme

_____Other _____

18. Which of the following are metho
diatrict to asaeas studenta' ski
topics? Check all that apply:

_____Standardized testa

_____Teacher-made teats

_____Questionnaires

_____Project evaluations

_____Teachera' observationa

_____Others' obaervations

_____Other _____

Has your district investigated how comp
of the following administrative purpose

		Investigated
19.	Attendance	o
20.	Student records/ report cards	o
21.	Payroll	o
22.	Accounting	o
23.	Inventory	o
24.	Printing mailing labels	o
25.	Electronic mail to staff	o
26.	Electronic mail to parents	o
27.	Student scheduling	o
28.	Student testing	o
29.	Personnel records	o

30. Which of the following are you currentl
trative computing needs of your distric

_____Our own district mainframe comput

_____Our own district microcomputer(s)

_____A multi-district or regional publ

_____A commercial computer service

_____Other _____

_____We do not use computers for admin

. Does your district use computers for career

_____Yes

_____No

_____Don't know

. Does your district have an assigned computer
responsible for computer use in instruction?

_____Yes

_____No

_____Don't know

. If yes, who assigned the computer coordinato

_____Superintendent/Board of Education

_____Principal

_____Other Administrator

_____Teachers

. Has your district offered training in introd
computer programming or computer science to

_____Yes

_____No

_____Don't know

. If yes, who was responsible for arranging fo

_____Superintendent

_____Assistant Superintendent/Curriculum Su

_____Principal

_____Teachers

36. If yes, what staff was eligible for tra

_____Teachers

_____Support staff

_____Administration

37. Does your district provide release time
teachers who develop computer-based ins

_____Yes

_____No

_____Don't know

38. How do you disseminate information conc
in your district? Check all that apply

_____Newsletters

_____Computer fsirs

_____Computer open house

_____Press releases

_____Letters to psrents or staff

_____Faculty meetings

_____Visits to other institutions

_____Demonstrations of new equipment/c

_____Conferences or meetings

_____Workshops

_____None of the sbove

How influential are the following persons o
deciding what computer-related courses are
students?

		Very Influential
39.	The Superintendent/School Board	o
40.	School principals	o
41.	Computer coordinator/specialist	o
42.	Teachers	o
3.	Parents	o
44.	Supervisors	o
5.	Local businesses	o
6.	Students	o
47.	Other _____	o

In your district, who is responsible

		Superintendent	Assistant Superintendent
48.	Deciding what computer-related skills and knowledge are to be learned by students	o	o
49.	Determining computer-related course offerings	o	o
50.	Establishing budgets for computer-related projects	o	o
51.	Planning staff training	o	o
52.	Implementing staff training programs	o	o
53.	Evaluating and selecting computer hardware	o	o
54.	Evaluating and selecting computer software	o	o
55.	Determining procurement process	o	o
56.	Assigning computer use	o	o
57.	Establishing and enforcing rules pertaining to the equitable, ethical and legal use of computers	o	o
58.	Evaluating student benefits from computer-related programs	o	o
59.	Communicating with parents and school board re course content, upd-raising		

From your experience with using computers
which of the following have you found to b

60. Lack of access to terminals or microcomputers

61. Lack of student interest

62. Low quality of educstional software

63. Reallocation of funds to computers from more pressing needs

64. Difficulty with integrating computer-taught skills with the remainder of the curriculum

65. Difficulty with managing student use of computers

66. Lack of teacher or staff training

67. Lack of teacher or staff interest

68. Lack of administrative support

From your experience with using computers
which of the following have you found to b

69. Providing immediate feedback

70. Having great patience

71. Keeping the learner actively involved

72. Providing self-paced instruction

73. Keeping records of student performance

74. Providing, through simulations, experienc
otherwise not possible in the classroom

75. Have you personally written or
teaches or provides instructio

_____No

_____Yes, 1 program

_____Yes, 2-5 programs

_____Yes, 6 or more programs

76. Which of the following sources
you use at least once a month?

_____Newspaper articles

_____Weekly computer periodic

General computer periodi
_____magazine, Consumer Repor

Educational computing pe
ing, Classroom Computer
_____Journal)

_____Professional periodicals

_____Software catalogs

_____Regional teacher trainin

_____Colleagues and friends

_____Formal classes or worksh

_____"User" or other professi

Electronic data services
_____Compuserve, EDUNET)

_____Magazinea delivered on e

_____Television/radio

_____Other _____

77. What has been the primary source of compu material for your district? Check one:

_____Computer manufacturers or distributo

_____Published texts

_____Materiala developed by other school

_____Material developed within our school

_____Public domain materials

_____Professional literature

QUESTIONS ABOUT USING COMPUTER PROGRAMS

78. What types of computer-related couraes or aince September 1981? Check all that app

_____Learning a programming language (au BASIC)

_____Learning word processing

_____Learning computer science

_____Learning research applicationa

_____Learning data processing

_____Learning business applications

_____A general introduction to computing

_____Learning about computer software

_____Learning about computer hardware

_____Learning authoring languages

_____Other, please apecify _____

_____None

Which of the following computer r
district?

Avai

79. Card punch
80. Card reader
81. Color monitor
82. CRT or other video monitor
83. Floppy disk drive
84. Graphics plotter
85. Graphics tablet
86. Hard disk drive
87. Joystick or game paddle
88. Light pen
89. Magazines
90. Magnetic tape drive, including cassette
91. Mainframe computer
92. Microcomputer
93. "Mouse"
94. Music board
95. Optical scanner
96. Paper tape punch
97. Paper tape reader
98. Parallel or aerial interface
99. Persons to assist
100. Printer
101. Reference books and manuals
102. Telephone modem
103. Textbooks
104. Voice synthesizer
105. Other _____

Which of the following computer devices ha
operated?

		Used
06.	Card punch	o
07.	Card reader	o
08.	Color monitor	o
09.	CRT or other video monitor	o
10.	Floppy disk drive	o
11.	Graphics plotter	o
12.	Graphics tablet	o
13.	Hard disk drive	o
14.	Joystick or game paddle	o
15.	Light pen	o
16.	Magnetic tape drive, including cassette	o
17.	Mainframe computer	o
18.	Microcomputer	o
19.	"Mouse"	o
20.	Music board	o
21.	Optical scanner	o
22.	Paper tape punch	o
23.	Paper tape reader	o
24.	Parallel or serial interface	o
25.	Printer	o
26.	Telephone modem	o
27.	Voice synthesizer	o
28.	Other _____	

29. _____I have not used any of these device

130. Are microcomputers being used with vide
videodisc players in your district?

_____Yes, with videocassette recorders

_____Yes, with videodisc players

_____Yes, with both

_____No

How often do you personally use the fol
need information regarding how to use a

		Oft
131.	Manuals supplied by the hardware company or publishers	
132.	Technical assistance from the vendor	
133.	School or district-level technical assistance	
134.	"Usera" group	
135.	Tutorial programs	
136.	Friends/colleagues/family	
137.	Reference books	
138.	Independent technical assistance	
139.	Professional periodicals	
140.	Commercial periodicals	
141.	Local professional organizations	

When initially considering "packaged" comp
important are each of the following?

		Very Important
142.	The reputation of the program	o
143.	The purpose of the program	o
144.	The data needed to use the program	o
45.	The equipment needed to run the program	o
146.	The "user-friendliness" or ease of use of the materials	o
147.	The author or source of the program	o
148.	Length or complexity of the documentation	o
149.	Completeness	o
150.	Other, please specify _____	
151.	_____I do not evaluate computer programs	

152. Given the computer hardware in your dis
kinds of programs are available for you
all that apply:

_____Simulations

_____Business programs (e.g., spreadsh

_____Math or statistics computation

_____Text editing or word processing

_____Tutorial programs

_____Drill-and-practice programs

_____Data base or file management prog

_____Graphics programs

_____Authoring language programs

_____Telecommunication programs

_____Compilers

_____Recreational programs

_____System utilities

153. Do you have a single-user microcomputer
your office?

_____Yes

_____No

154. Does your secretary have a single-user
terminal to use at work?

_____Yes

_____No

155. Where do you have access to a computer out
all that apply:

I do not have access to a computer o
_____school

_____At home

_____At a friend's home

_____At someone's place of work

_____At a college or university

_____At a library

_____Other, please specify _____

Where have you used the following kinds of
packages?

		School
156.	Accounting	o
157.	Authoring	o
158.	Business	o
159.	Communications	o
160.	Computational	o
161.	Data base management	o
162.	Educational	o
163.	Graphics	o
164.	Home management	o
165.	Integrated packages	o
166.	Recreation	o
167.	Simulations	o
168.	Spreadsheets	o
169.	Statistical analysis	o
170.	Telecommunications	o
171.	Utility	o
172.	Word processing	o

173. Which of the following sets of ke
sonally operate by "touch" typing

_____Alphabetic

_____Numeric

_____Function (for example, "ente

_____None

174. How often do you personally use a
puter dedicated to word processir

_____Never

_____Rarely

_____Monthly

_____Weekly

_____Daily

175. How long have you personally been
or a dedicated word processor (no
computer)?

_____I have not used a word proce

_____Less than one month

_____Two to four months

_____Five months to a year

_____13-24 months

_____More than 2 years

176. For which of the following types of doc
a word processing program or a computer
ing? Check all that apply:

_____Memoranda

_____Letters

_____Short reports (up to 19 pages)

_____Long reports (20 or more pages)

_____Other _____

_____Not applicable

Which of the following outputs from a c
produced or had produced for making dec

		Produced
177.	Spreadsheets	o
178.	Charts and tables	o
179.	Graphs	o
180.	Drawings	o

181. _____I have not produced any of these

182. Computers are frequently used to acces
the following types of data bases have
Check all that apply:

_____I have not accessed any data bas

_____Career information

_____Bibliographical citations (libr

_____Stock market

_____School or district data (person
inventory, etc.)

_____Student records

_____National press wire services

_____Electronic bulletin board

_____Computer courseware or other ed
resources

_____Recreational programs

_____Other _____

QUESTIONS ABOUT DEVELOPING COMPUTER PROGRAMS

183. Which of the following sctivities have y
with a computer? Check all that apply:

_____I have not done any of these activi

_____Loaded s program into memory

_____Saved a program on a disk, tape, or

_____Named or renamed a program file

_____Listed a program

_____Backed up a copy of a program or fi

_____Deleted s program from disk or tape

_____Erased computer memory

_____Accessed a catalog or menu of saved

_____Run a program

_____Tested and debugged a program

184. In which of the following lsnguages have
Check all that apply:

_____I have not written s program

_____APL

_____Assembly Language

_____BASIC

_____COBOL

_____FORTRAN

185. What was the length, in lines, of the longest written?

_____0, I have not written a program

_____1-10 lines or 1 procedure

_____11-25 lines or 2-3 procedures

_____26-50 lines or 4-10 procedures

_____51-100 lines or 11-20 procedures

_____101 or more lines or 21 or more proced

186. What is the longest program--written by some personally modified, edited, or changed in s would perform a different task?

_____I have never changed a program

_____1-20 lines (approximately 1 screen)

_____21-40 lines (approximately 2 screens)

_____40 or more lines

Have you, yourself, written a computer program
the following elements? Check all that apply:

_____I have not written a program

_____Repetition or iteration

_____Conditional decisions ("if, then")

_____Use of variables

_____Logical operations

_____Arithmetic operations

_____Sound output

_____Graphical output

_____Using arrays

_____Using data files

_____Statementa for accepting input from keybo
pheral device

_____Format statements or image strings for ou
on video display, printer or other periph

188. Which of the following sources of ina
have you experienced? Check all that

_____ The input data was inaccurate (
garbage out")

_____ The program "rounded off" inapp

_____ There was a logical error in th

_____ The input data was called from
(wrong field, wrong variable, e

_____ The program was inappropriate

_____ Other, please specify _____

_____ None

QUESTIONS ABOUT ANALYZING COMPUTER APPLICA

Many districts use computers for rec
students and staff. Please answer t
your district uses computers for thi
spply:

189. Who uses the computer?

_____ Principal

_____ Teachers

_____ Special computer personnel

_____ Guidance counselors

_____ Secretaries, Clerks

_____ Students

_____ Other _____

190. What types of information are main about students?

_____Classea requeated

_____Classes enrolled

_____Gradea received

_____Homeroom asaignment

_____Standard teat scorea

_____Honora

_____School enrolled

_____Peraonal profile

_____Attendance

_____Class achedule

_____Residence

_____Age (Birth date)

_____Telephone number

_____Other _____

191. What typea of information are main about staff?

_____Salary

_____Residence

_____Yeara of aervice

_____Educational attainment

_____Current grade level of clasa

_____Subject areaa of current cla

_____School

_____Certification statua

_____Other _____

192. What sorts of summary information do you
the student record system in your distri

_____Course enrollments

_____Student schedules

_____School or district standardized te

_____Bussing schedules and routes

_____Attendance records

_____Room/building utilization

_____Grade point averages

_____Class ranks

_____Other _____

193. Which of the following groups utilize co
your district?

_____Administrative personnel

_____Instructional personnel

_____Students

_____Parents

The following administrative tasks may be
personally, by a member of your atаff, or
Please indicate, for each taak, whether th
computer aaaistance, without computer aasi
all.

		W Com Asai
94.	Mathematical calculations, such aa those used in maintaining a checkbook	
95.	Writing letters	
96.	Operating amall appliances	
97.	Scoring student teats	
198.	Reporting standarized test scorea to parents	
199.	Maintaining mailing lista	
200.	Retaining atudent recorda	
201.	Scheduling classea	
202.	Scheduling tranaportation	
203.	Performing statistical analyses	
204.	Conatructing individualized instruction plana (IEP'a)	
205.	Keeping student gradea	
206.	Creating atudent report cards	
207.	Operating security aystem	
208.	Operating air conditioning/heating system	
209.	Operating lighta	
210.	Writing payroll checks	
211.	Operating a a rinkler (fire revention	

215. Which of the following data quality assu
done or directed someone else to do? Ch

_____Eatabliahed categories of data to

_____Identified indicators or measurea

_____Obtained data

_____Dealt with missing data

_____Changed data into a machine-readab

_____Verified machine data against raw

_____Conducted range check

_____Examined summary statistics, such
dard deviations

_____Other _____

In your district, how often have any of the fol
related problems occurred in the past year?

Problem	Never	1-2 Times	Freq
Intentional equipment damage	o	o	
Equipment theft	o	o	
Intentional destruction of data	o	o	
Unauthorized change of data	o	o	
Theft of data	o	o	
Copying copyrighted programs	o	o	
Theft of passwords	o	o	
Intentional disruption of operating system	o	o	
Student cheating on computer projects	o	o	

225. In the past year have you been affe
your district?

_____Yes

_____No

226. If yes, generally how quickly was t

_____As soon as it was noticed (i.

_____Within one dsy

_____Within one week

_____In 1-2 weeks

_____In 3-4 weeks

_____It has not been fixed

227. If yes, how much did the error cos

_____Don't know

_____Less than $50

_____$51 - $500

_____$501 - $5,000

_____$5,000+

228. In the past year, have you heard a
parents, or employees about loss o
to the introduction of computers?

_____Yes

_____No

In the past year, have you heard any atudent, pa
tell you that they are using a computer in their

_____Yes

_____No

Have you ever been required to interact with a c
would have preferred to interact with a person (
machine teller instead of a human teller)?

_____Yes

_____No

In the paat month, how many complaints have you
parenta, atudents, or district employees regardi
invasion of privacy?

_____None

_____1-3

_____4-10

_____11-20

_____21+

232. Which of the following actions have you t
concerned about the possibility of having
invaded by a computer? Check all that ap

_____ Omitting certain information when f
applications

_____ Requesting your name be removed fro

_____ Declining to provide your social se

_____ Complaining to government agencies

_____ Writing to a legislator

_____ Writing to the editor of a newspape

_____ Other _____

_____ I have not taken any such actions

233. Which of the following actiona have you ta
protect the privacy of entries on a comput
all that apply:

_____ Restricted or limited the data that into the data base

_____ Identified individuala by identifica

_____ Stored information neceasary to link a separate location

_____ Periodically purged data

_____ Encoded all data

_____ Restricted phyaical acceaa to termin

_____ Aasigned uaer "log on" ID to restric

_____ Encrypted data when tranaferring fro

_____ Restricted phyaical accesa to data c

_____ I have not taken any auch actions

234. Do you (or any member of your fam

_____Yes

_____No

235. If yes, about how many minutes per

_____Minutes

If yes, what proportion of the time
at home is spent in the following

	Computer Use	Pro
236.	Working alone	0% 2
237.	Teaching someone	0% 2
238.	Working together with someone	0% 2

239. If yes, what proportion of the time
at home is spent in recreation use

_____0%

_____25%

_____50%

_____75%

_____100%

240. Which of the following operating systems used?

_____CP/M

_____Apple DOS3.3

_____TRSDOS

_____MS-DOS or PC-DOS

_____Unix

_____UCSD-p-system

_____Zenix

_____VMS

_____TSO

_____Other _____

_____Don't know

_____I have not used any operating syst

Which of the following data communicatio equipment have you used?

		Used
241.	Modem	o
242.	Serial (RS232) or Parallel Interface	o
243.	Port	o
244.	Protocol Emulator or Converter	o

245. Approximately what percentage of the micr
are reserved strictly for teacher use (fo
inservice trsining, etc.)?

_____0-25% of the microcomputers

_____26-50% of the microcomputers

_____51-75% of the microcomputers

_____76-100% of the microcomputers

How sre computer resources (terminals, mi
in your district? Check the one that mos
district, for each school level.

	Hig Scho (24
All schools hsve approximately the same number of computers that they keep all year.	c
One school has more computers than the other(s) and keeps them all year.	c
A number of computers are rotated as a group through the schools for a specific period of time.	o
The number of computers varies from school to school.	c

COMPUTER LITERACY

QUESTIONS FOR PRINCIPALS

TIONS ABOUT ADMINISTERING COMPUTER-RELATED POLI

Does your school have written goals for stude

_____Yes, in place

_____Yes, in progress

_____No

_____Don't know

If yes, which goals have been established in
computer education? Check all that apply.

_____Computers to be used as a functional wor
by all students in a wide variety of sub

_____Computers to manage the educational proc
supplying individual prescriptions to ea

_____Computer science courses to be offered

_____Data processing courses to be offered

_____Computers to be used in conjunction with
technologies

_____None of the above

_____Don't know

Does your school have written policies concer
utilization?

_____Yes

_____No

_____Don't know

4. If yes, which of the following areas do you
Check all that apply:

_____ Integration of computer-related learni into the existing curricula

_____ Sharing of equipment

_____ Development of computer software

_____ Standardization of hardware and softwa

_____ Loaning computers to students or staff

_____ Graduation requirements

_____ Recreational use of computers

_____ Not applicable

5. What has been instrumental in developing and
activity in your school? Check all that app

_____ Business/community initiative or suppor

_____ University/college assistance

_____ Federal funding

_____ State assistance

_____ Local appropriations

_____ Administrative initiative or support

_____ Teacher initiative or support

_____ Student initiative or support

_____ Local board policy

_____ Parent initiative or support

_____ We have no computer-related activities school

_____Yes, as electives

_____Yes, as requirements

_____Yes, both as electives and requiremer

_____No

7. Which, if any, of the following courses a
Check all that apply:

_____Introduction to Computing

_____Computer Science

_____Computer Programming

_____Word Processing

_____Data Processing

_____None of these courses

8. Have the enrollments for computer-related
increased since last year?

_____Yes, in elective courses

_____Yes, in requirement courses

_____Yes, in both

_____No

_____Don't know

9. Does your school have specific timetables
based systems and/or curricula?

_____Yes

_____No

_____Don't know

10. Does your school have a special procureme
computer equipment?

_____Yes

_____No

_____Don't know

11. Does your school hsve specific policies
parental input to computer-related decis

_____Yes

_____No

_____Don't know

12. In what way are parent groups involved w
school? Check all that apply:

_____Providing organized community suppo

_____Funding hardware or software purcha

_____Serving as tescher aids

_____Helping with planning for computers

_____Using school computers at home with

_____Writing computer programs

_____Fund raising for computer-related s
materials

_____Providing individual support

_____Other _____

13. Has some non-school group, such as a com
sponsored a project that supported the u
school?

_____Yes

_____No

What mechanics have been put in operation for pa
knowledgeable about computers and to be informed
children are doing? Check all that apply:

_____Parent/teacher meetings and demonstrations

_____Parent/student workshops

_____Computer assignments and printouts sent hom

_____Assistance in purchasing appropriate hardwa
software for home use

_____Student assignments to be done at home

_____Other _____

_____None of the above

For which of the following items are there budge
your school? Check all that apply:

_____Computer hardware (keyboards, monitors, com
disk drives, printers, graphics tablets, et

_____Computer software and courseware (programs,

_____Teacher training related to hardware and sc
use

How are computers used to support instruction in
Check all that apply:

_____Used for teaching and learning

_____Used for instruction in programming

_____Used as a tool in various subjects and cour

_____Used for computer-managed instruction

students learn to use and/or program compu

		Learn to Use As A Tool	Learn to Program	Us
17.	Art	o	o	
18.	Business Education	o	o	
19.	Introduction to Computing	o	o	
20.	Computer Programming	o	o	
21.	Computer Science	o	o	
22.	Distributive Education	o	o	
23.	Economics	o	o	
24.	English	o	o	
25.	Foreign Language	o	o	
26.	Health	o	o	
27.	Home Economics	o	o	
28.	Independent Study	o	o	
29.	Mathematics	o	o	
30.	Music	o	o	
31.	Physical Education	o	o	
32.	Programs for Gifted Students	o	o	
33.	Science	o	o	
34.	Social Studies	o	o	
35.	Special Education	o	o	
36.	Vocational Education	o	o	
37.	Other, please specify _____			

38. In your school, are there specific rules following? Check all that apply:

_____Protecting equipment from damage

_____Protecting equipment from loss

_____Destroying another person's data

_____Disrupting the operation of the com

_____Scheduling or sharing equipment

_____Scheduling or sharing programs

_____Copying copyrighted programs

_____Copying other students' graded compu

39. When school is closed either for the summ what is your policy regarding computers?

_____Send computers home with students

_____Allow teachers or administrators to

_____Distribute them to other selected in

_____Lock them up for safekeeping

_____Leave them in their assigned locatio

_____Use them for school or district trsi curriculum development

_____Send them out for maintensnce

_____Use them in summer camp

_____None of the above

What procedures does your school use for evaluatin
computer-related learning materials? Check all tha

_____An evaluation committee reviews proposed mate

_____A computer coordinator or specialist reviews
posed materials

_____We rely on salespersons' recommendations

_____We rely on external evaluators, such as consu
or state education departments

_____A supervisor or administrator reviews propose
materials

_____A media specialist reviews proposed materials

_____We rely on teacher recommendations

_____Other _____

Which of the following are methods or techniques u
school to assess student's skill and knowledge of
topics? Check all that apply:

_____Standardized tests

_____Teacher-made tests

_____Questionnaires

_____Project evaluations

_____Teachers' observations

_____Others' observations

_____Other _____

Has your school investigated how computers might
the following administrative purposes?

	Investigated	Implemer
Attendance	o	o
Student records/ report cards	o	o
Payroll	o	o
Accounting	o	o
Inventory	o	o
Printing mailing labels	o	o
Electronic mail to staff	o	o
Electronic mail to parents	o	o
Student scheduling	o	o
Student testing	o	o
Personnel records	o	o

Which of the following are you currently using t
trative computing needs of your school? Check a

_____Our own school mainframe computer

_____Our own school microcomputer(s)

_____A multi-district or regional public compute service

_____A commercial computer service

_____Other _____

_____We do not use computers for administrative

54. Does your school use computers for ca

_____Yes

_____No

_____Don't know

55. Does your school have an assigned com
responsible for computer use in instr

_____Yes

_____No

_____Don't know

56. If yes, who assigned the computer coo

_____Superintendent/Board of Educatio

_____Principal

_____Other Administrator

_____Teachers

Has your school offered training in introduction
computer programming or computer science to the

_____Yes

_____No

_____Don't know

f yes, who was responsible for arranging for in

_____Superintendent

_____Assistant Superintendent/Curriculum Supervi

_____Principal

_____Teachers

_____Other _____

If yes, what staff was eligible for training?

_____Teachers

_____Support staff

_____Administration

Does your school provide release time or financi
teachers who develop computer-based instructiona

_____Yes

_____No

_____Don't know

61. How do you disseminate information c
in your school? Check all that appl

_____Newsletters

_____Computer fairs

_____Computer open house

_____Press releases

_____Letters to parents or staff

_____Faculty meetings

_____Visits to other institutions

_____Demonstrations of new equipment

_____Conferences or meetings

_____Workshops

_____None of the above

62. Is your school involved in a networ
that does the following? Check all

_____Shares hardware resources

_____Shares software resources

_____Shares data

_____Shares personnel

_____Shares ideas

_____Not involved

How influential are the following persons or gr
deciding what computer-related courses are to b
students?

	Very Influential	Infl
The Superintendent/School Board	o	
School principals	o	
Computer coordinator/specialist	o	
Teachers	o	
Parents	o	
Supervisors	o	
Local businesses	o	
Students	o	
Other _____	o	

In your district, who is responsible for each of t

	Superintendent	Assistant Superintendent	Principal	Assistant Principal	Computer Specialist
Deciding what computer-related skills and knowledge are to be learned by students	o	o	o	o	o
Determining computer-related course offerings	o	o	o	o	o
Establishing budgets for computer-related projects	o	o	o	o	o
Planning staff training	o	o	o	o	o
Implementing staff training programs	o	o	o	o	o
Evaluating and selecting computer hardware	o	o	o	o	o
Evaluating and selecting computer software	o	o	o	o	o
Determining procurement process	o	o	o	o	o
Assigning computer use	o	o	o	o	o
Establishing and enforcing rules pertaining to the equitable, ethical and legal use of computers	o	o	o	o	o
Evaluating student benefits from computer-related programs	o	o	o	o	o

IONS ABOUT TEACHING WITH OR ABOUT COMPUTERS

Listed below are some ways teachers use or teac
Please check those activities that currenty tak
school and those activities that are being plan

Use	Computer Activity	Current Use
	For numerical calculations	o
	To run simulations	o
	For instructional games	o
	As leisure time activity and reward	o
	For student problem solving	o
	For drill-and-practice	o
	As a tutor (teach content)	o
	To demonstrate concepts	o
	To score tests	o
	As an instructional management aid	o
	As a material generator (tests or worksheets)	o
	For information retrieval	o
	For student analysis of data	o
	For word processing	o
	For special needs students	o
	To control laboratory equipment	o
Teach		
	To teach programming	o
	To teach computer operation	o
	To teach data processing	o
	To teach hardware & software procedures	o
	To teach history of computers	o
	To teach how computers are applied	o
	To teach about computer careers	o
	To teach about the role and impact of computers in society	o

In what subject areas does your school in
based on computerized testing and compute

		For indiv educatio plans (I
110.	Art/Graphic Arts	o
111.	Business Education	o
112.	Computer Education (fundamentals of computing)	o
113.	Computer Programming (in-depth study of a programming language)	o
114.	English/Language Arts	o
115.	Foreign Languages	o
116.	Health	o
117.	Home Economics	o
118.	Industrial Arts	o
119.	Mathematics	o
120.	Music	o
121.	Performing Arts	o
122.	Physical Education	o
123.	Science	o
124.	Social Studies/Social Science	o

your experience with using computers in teachin
h of the following have you found to be a disadv

	A Dis-advantage	Not adva
of access to ter- ls or microcomputers	o	
of student interest	o	
quality of educational software	o	
location of funds to computers more pressing needs	o	
ficulty with integrating computer- ght skills with the remainder he curriculum	o	
ficulty with managing ent use of computers	o	
of teacher or staff training	o	
of teacher or staff interest	o	
of administrative support	o	

your experience with using computers in teachin
h of the following have you found to be an advan

	An Advantage	Not Adva
viding immediate feedback	o	
ng great patience	o	
oing the learner actively involved	o	
viding self-paced instruction	o	
oing records of student formance	o	
viding, through simulations, eriences otherwise not possible the classroom	o	

40. Have you personally written or designed a co
teaches or provides instruction in a particu

_____No

_____Yes, 1 program

_____Yes, 2-5 programs

_____Yes, 6 or more programs

41. Which of the following sources of informatio
you uae at least once a month? Check all th

_____Newspaper articles

_____Weekly computer periodicals (such as I

_____General computsr periodicals (such as
Computing, Byte magazine, Consumer Rep

_____Educational computing periodicals (suc
tronic Learning, Classroom Computer Le
Computing Teacher, THE Journal)

_____Professional periodicals (such as Math
AEDS Monitor)

_____Software cataloga

_____Regional teacher training centera

_____Colleagues and friends

_____Formal classes or workshops, including

_____"User" or other profeasional groupa

_____Electronic data servicea (such as The
Compuserve, EDUNET)

_____Magazines delivered on electronic medi

_____Television/radio

_____Other _____

What has been the primary source of computer-material for your school? Check one:

_____Computer manufacturers or distributors

_____Published texts

_____Materials developed by other school syst

_____Material developed within our school or

_____Public domain materials

_____Professional literature

Which individuals in your school teach others computers? Check all that apply:

_____Administrators

_____Teachers

_____Paid teacher aides or parsprofessionals

_____Computer specialists

_____Library media specialists

_____Volunteers

_____Other school staff

_____Students

_____Other _____

QUESTIONS ABOUT USING COMPUTER PROGRAMS

144. What types of computer-related courses or
since September 1981? Check all that app

_____ Learning a programming language (su
Logo, or BASIC)

_____ Learning word processing

_____ Learning computer science

_____ Learning research applications

_____ Learning data processing

_____ Learning business applications

_____ A general introduction to computing

_____ Learning about computer software

_____ Learning about computer hardware

_____ Learning authoring languages

_____ Other, please specify _____

_____ None

hich of the following computer resources are avs
chool?

	Available	No Avail
ard punch	o	o
ard reader	o	o
olor monitor	o	o
RT or other video monitor	o	o
loppy disk drive	o	o
raphics plotter	o	o
raphics tablet	o	o
ard disk drive	o	o
oystick or game paddle	o	o
ight pen	o	o
agazines	o	o
agnetic tape drive, includ-ng cassette	o	o
ainframe computer	o	o
icrocomputer	o	o
"Mouse"	o	o
usic board	o	o
ptical scanner	o	o
aper tape punch	o	o
aper tape reader	o	o
arallel or serial interface	o	o
ersons to assist	o	o
rinter	o	o
eference books and msnuals	o	o
elephone modem	o	o
extbooks	o	o
oice synthesizer	o	o
ther _____		

Which of the following computer devices h
operated?

		Used
172.	Card punch	o
173.	Card reader	o
174.	Color monitor	o
175.	CRT or other video monitor	o
176.	Floppy disk drive	o
177.	Graphics plotter	o
178.	Graphics tablet	o
179.	Hard disk drive	o
180.	Joystick or game paddle	o
181.	Light pen	o
182.	Magnetic tape drive, including cassette	o
183.	Mainframe computer	o
184.	Microcomputer	o
185.	"Mouse"	o
186.	Music board	o
187.	Optical scanner	o
188.	Paper tape punch	o
189.	Paper tape reader	o
190.	Parallel or serial interface	o
191.	Printer	o
192.	Telephone modem	o
193.	Voice synthesizer	o
194.	Other _____	

195. _____I have not used any of these device

Are microcomputers being used with videocasset
videodisc players in your school?

_____Yes, with videocassette recorders

_____Yes, with videodisc players

_____Yes, with both

_____No

How often do you personally use the following
need information regarding how to use a comput

	Often	Som
Manuals supplied by the hardware company or publishers	o	
Technical assistance from the vendor	o	
School or district-level technical assistance	o	
"Users" group	o	
Tutorial programs	o	
Friends/colleagues/family	o	
Reference books	o	
Independent technical assistance	o	
Professional periodicals	o	
Commercial periodicals	o	
Local professional organizations	o	

When initially considering "packaged" com
important are each of the following?

		Very Important
208.	The reputation of the program	o
209.	The purpose of the program	o
210.	The data needed to use the program	o
211.	The equipment needed to run the program	o
212.	The "user-friendliness" or ease of use of the materials	o
213.	The author or source of the program	o
214.	Length or complexity of the documentation	o
215.	Completeness	o

216. Other, please specify _____

217. _____I do not evaluate computer programs

Given the computer hardware in your school, whic
inds of programs are available for you personal
all that apply:

_____Simulations

_____Business programs (e.g., spreadsheets)

_____Math or statistics computation

_____Text editing or word processing

_____Tutorial programs

_____Drill-and-practice programs

_____Data base or file management programs

_____Graphics programs

_____Authoring language programs

_____Telecommunication programs

_____Compilers

_____Recreational programs

_____System utilities

Do you have a single-user microcomputer or a com
your office?

_____Yes

_____No

Does your secretary have a single-user microcomp
terminal to use at work?

_____Yes

_____No

221. Where do you have access to a computer outs
all that apply:

I do not have access to a computer out
_____school

_____At home

_____At a friend's home

_____At someone's place of work

_____At a college or university

_____At a library

_____Other, please specify _____

Where have you used the following kinds of
packages?

		School
222.	Accounting	o
223.	Authoring	o
224.	Business	o
225.	Communications	o
226.	Computational	o
227.	Data baae management	o
228.	Educational	o
229.	Graphics	o
230.	Home management	o
231.	Integrated packagea	o
232.	Recreation	o
233.	Simulations	o
234.	Spreadsheets	o
235.	Statistical analysia	o
236.	Telecommunicationa	o
237.	Utility	o
238.	Word processing	o

Which of the following sets of keys on a keyboa
operate by "touch" typing? Check all that appl

_____Alphabetic

_____Numeric

_____Function (for example, "enter" or "return"

_____None

How often do you personally use a word processi
computer dedicated to word processing?

_____Never

_____Rarely

_____Monthly

_____Weekly

_____Daily

How long have you personally been uaing a word
or a dedicated word processor (not necessarily
computer)?

_____I have not used a word processing program

_____Less than one month

_____Two to four months

_____Five months to a year

_____13-24 months

_____More than 2 yeara

242. For which of the following types o
a word processing program or a com
Check all that apply:

_____Memoranda

_____Letters

_____Short reports (up to 19 pages

_____Long reports (20 or more page

_____Other _____

_____Not applicable

Which of the following outputs fro
produced or had produced for makin

Pro

243. Spreadsheets

244. Charts and tables

245. Graphs

246. Drawings

247. _____I have not produced any of th

3. Computers are frequently used to accesa data
following types of data bases have you perso
all that apply:

_____I have not accessed any data baaes

_____Career information

_____Bibliographical citations (library)

_____Stock market

_____School or district data (personnel, bud
inventory, etc.)

_____Student recorda

_____National preas wire services

_____Electronic bulletin board

_____Computer couraeware or other educationa
reaources

_____Recreational programa

_____Other _____

249. Which of the following activities have you, with a computer? Check all that apply:

_____I have not done any of these activities

_____Loaded a program into memory

_____Saved a program on a disk, tape, or car

_____Named or renamed a program file

_____Listed a program

_____Backed up a copy of a program or file

_____Deleted a program from disk or tape

_____Erased computer memory

_____Accessed a catalog or menu of saved pro

_____Run a program

_____Tested and debugged a program

250. In which of the following languages have you Check all that apply:

_____I have not written a program

_____APL

_____Assembly Language

_____BASIC

_____COBOL

_____FORTRAN

_____Logo

_____Pascal

_____Pilot

_____RPG

_____Other ____

hat was the length, in linea, of the longest pro
ritten?

_____0, I have not written a program

_____1-10 linea or 1 procedure

_____11-25 lines or 2-3 procedurea

_____26-50 lines or 4-10 procedurea

_____51-100 lines or 11-20 procedures

_____101 or more lines or 21 or more procedures

hat is the longest program--written by someone e
eraonally modified, edited, or changed in some w
ould perform a different task?

_____I have never changed a program

_____1-20 linea (approximately 1 screen)

_____21-40 lines (approximately 2 acreens)

_____40 or more lines

3. Have you, yourself, written a computer program
the following elements? Check all that apply:

_____I have not written a program

_____Repetition or iteration

_____Conditional decisions ("if, then")

_____Use of variables

_____Logical operations

_____Arithmetic operations

_____Sound output

_____Graphical output

_____Using arrays

_____Using data files

_____Statements for accepting input from keyb
other peripheral device

_____Format statements or image strings for o
information on video display, printer or
peripheral device

4. Which of the following sources of inaccuracies
have you experienced? Check all that apply:

_____The input data was inaccurate ("Garbage
garbage out")

_____The program "rounded off" inappropriatel

_____There was a logical error in the program

_____The input data was called from the wrong
location (wrong field, wrong variable, e

_____The program was inappropriate for the pr

_____Other, please specify _____

_____None

NS ABOUT ANALYZING COMPUTER APPLICATIONS

any schools use computers for recording and acce
tudents and staff. Please answer the following
our school uses computers for this purpose. Che
pply:

no uses the computer?

_____Principal

_____Teachers

_____Special computer personnel

_____Guidance counselors

_____Secretaries, Clerks

_____Students

_____Other _____

What types of information are mai
about studenta?

_____Classes requested

_____Classes enrolled

_____Grades received

_____Homeroom assignment

_____Standard test scores

_____Honors

_____School enrolled

_____Personal profile

_____Attendance

_____Class schedule

_____Reaidence

_____Age (Birth date)

_____Telephone number

_____Other _____

257. What typea of information are maint.
about staff?

_____Salary

_____Residence

_____Years of service

_____Educational attainment

_____Current grade level of classes

_____Subject areas of current class

_____School

_____Certification status

_____Other _____

t sorts of summary information do you retrieve
e student record system at your school?

____Course enrollments

____Student schedules

____School or district standardized test score summaries

____Bussing schedules and routes

____Attendance records

____Room/building utilization

____Grade point averages

____Class ranks

____Other _____

ich of the following groups utilize computer gen
ur school?

____Administrative personnel

____Instructional personnel

____Students

____Parents

factors that might argue against co
following have you considered? Che

_____Equipment acquisition costs

_____Equipment-related costs

_____Equipment availability (acces

_____Hardware maintenance

_____Software maintenance

_____Software acquisition costs

_____Software-related costs

_____Software availability/accessi

_____Equipment capacity (memory)

_____Equipment capacity (CPU)

_____Textbook availability

_____Data gathering costs

_____Data storage costs

_____Data entry costs

_____Programming costs

_____Output capabilities

_____Other _____

The following administrative tasks may be
sonally, by a member of your staff, or by
Please indicate, for each task, whether th
computer assistance, without computer assi
all.

		Wi Comp Assis
261.	Mathematical calculations, such as those used in maintaining a checkbook	
262.	Writing letters	
263.	Operating small appliances	
264.	Scoring student tests	
265.	Reporting standarized test scores to parents	
266.	Maintaining mailing lists	
267.	Retaining student records	
268.	Scheduling classes	
269.	Scheduling transportation	
270.	Performing statistical analyses	
271.	Constructing individualized instruction plans (IEP's)	
272.	Keeping student grades	
273.	Creating student report cards	
274.	Operating security system	
275.	Operating air conditioning/heating system	
276.	Operating lights	
277.	Writing payroll checks	
278.	Operating a sprinkler (fire prevention or landscape watering) system	
279.	Operating a telephone answering system	
280.	Labor relations and negotiations	

done or directed someone else to do? Che

_____Established categories of data to b

_____ Identified indicators or measures f categories

_____Obtained data

_____Dealt with missing data

_____Changed data into a machine-readabl

_____Verified machine data against raw d

_____Conducted range check

_____ Examined summary statistics, such a means and standard deviations

_____Other _____

your school, how often have any of the following
oblems occurred in the past year?

	Frequency		
	Never	1-2 Times	3-5
oblem			
tentional equipment nage	o	o	
uipment theft	o	o	
tentional destruction data	o	o	
authorized change of data	o	o	
eft of data	o	o	
oying copyrighted programs	o	o	
eft of passwords	o	o	
tentional disruption of erating system	o	o	
udent cheating on mputer projects	o	o	

292. In the past year, have you been a error" in your school?

_____Yes

_____No

293. If yes, generally how quickly was

_____As soon as it was noticed (

_____Within one day

_____Within one week

_____In 1-2 weeks

_____In 3-4 weeks

_____It has not been fixed

294. If yes, how much did the error co

_____Don't know

_____Less than $50

_____$51-$500

_____$501-$5,000

_____$5,000+

295. In the past year, have you heard parents, or employees about loss to the introduction of computers?

_____Yes

_____No

296. In the past year, have you heard tell you that they are using a co

_____Yes

ve you ever been required to interact with a comp
uld have preferred to interact with a person (fo
chine teller instead of a human teller)?

___Yes

___No

the past month, how many complaints have you hea
udents or school employees regarding computer-re
ivacy?

___None

___1-3

___4-10

___11-20

___21+

ich of the following actions have you taken becau
ncerned about the possibility of having your pers
vaded by a computer? Check all that apply:

___Omitting certsin information when filling out
forms or applications

___Requesting your name be removed from a list

___Declining to provide your social security nu

___Complaining to government agencies

___Writing to a legislator

___Writing to the editor of a newspaper or magaz

___Other _____

___I have not taken any such actions

300. Which of the following actions hav
protect the privacy of entries on
all that apply:

_____ Restricted or limited the da
or entered into the data bas

_____ Identified individuals by id
instead of names

_____ Stored information necessary
ID numbers in a separate loc

_____ Periodically purged data

_____ Encoded all data

_____ Restricted physical access t

_____ Assigned user "log on" ID to
data

_____ Encrypted data when transfer
tion to another

_____ Restricted physical access t
or disks

_____ I have not taken any such ac

o you (or any member of your family) have a compu

____Yes

____No

f yes, about how many minutes per week do you use

____Minutes

f yes, what proportion of the time that you spend
t home is spent in the following ways?

omputer Use	Proportion of Time
orking alone	0% 25% 50% 75%
eaching someone	0% 25% 50% 75%
orking together ith someone	0% 25% 50% 75%

f yes, what proportion of the time that you spend
t home is spent in recrestional use (either alone

____0%

____25%

____50%

____75%

____100%

307. Which of the following operat
used?

_____CP/M

_____Apple DOS3.3

_____TRSDOS

_____MS-DOS or PC-DOS

_____Unix

_____UCSD-p-system

_____Zenix

_____VMS

_____TSO

_____Other _____

_____Don't know

_____I have not used any ope

Which of the following data c
equipment have you used?

308. Modem

309. Serial (RS232) or Parallel
Interface

310. Port

311. Protocol Emulator or Converte

HAT INVENTORY COMPUTER-RELATED RESOURCES

many computer terminals and microcomputers are m
tudents for instructional use in your school bui
ude computers personally owned by students:

_Number of single-user microcomputers

_Number of terminals

_Total

oximately what percentage of the microcomputers
reserved strictly for teacher use (for classroom
rvice training, etc.)?

_0-25% of the microcomputers

_26-50% of the microcomputers

_51-75% of the microcomputers

_76-100% of the microcomputers

ocomputers are often described in terms of their
ry capacity, such as "2K" or "16K." What are th
ers of microcomputers of different capscities av
ents in your school building?

Type of Microcomputer

ocomputers with less than 16K internal
ry

ocomputers with 16K-64K internal
ry

ocomputers with more than 64K internsl
ry

ocomputers for which you do not know
internal memory

ll of the above microcomputers, how many
a disk drive?

321. Whst is the ratio of students to compu
classes at your school?

	Students		Con
_____	1	to	
_____	2	to	
_____	3	to	
_____	4-6	to	
_____	7-10	to	
_____	11-20	to	
_____	21-30	to	
_____	Other _____		

322. What ratio of students to computer/ter
would you see meeting student needs ir

	Students		Comp
_____	1	to	
_____	2	to	
_____	3	to	
_____	4-6	to	
_____	7-10	to	
_____	11-20	to	
_____	21-30	to	
_____	Other _____		
_____	Stay the same		

323. If you have computers in your school,
you using?

_____Number of models

your school had 32 microcomputers, how would yo
em?

___ One microcomputer per classroom for 32 classrooms

___ Two microcomputers per classroom for 16 classrooms

___ Four microcomputers in each of 8 classrooms o locations

___ Sixteen microcomputers per classroom for 2 classrooms

___ All microcomputers placed in one location

___ Other _____

proximately how many instructional software pack
torials, drill-and-practice, etc.) are there ava
udents and teachers to use on microcomputers in

___ None

___ 1-10 diskettes full

___ 11-20 diskettes full

___ 21-50 diskettes full

___ 51 or more diskettes full

___ Don't know

you have a catalog of the computer software tha
ur school?

___ Yes

___ No

___ Don't know

What is the location of the computer t
that are being used by students in you
please indicate approximate quantity a
of minutes the microcomputers and term
for student use outside of scheduled c

	Location	Approximate of Microcomp and Termina
327.	Classrooms	_____
328.	Library/Media Center	_____
329.	Computer Laboratory/ Center	_____
330.	Department Office	_____
331.	Portable computers within school used in different locations	_____
332.	Other, please specify _____	

Approximately how much time (in minute
day using computers for instructional
hours? Include before and after schoo
available, but do not include guidance

333. Students in computer courses:

_____Average number of minutes

334. Students not in computer courses:

_____Average number of minutes

335. Students in special education classes:

_____Average number of minutes

336. Students in gifted and talented class

oximately what percentage of students in your sch
uters at least once a week? Check one:

_0%
_1-10%
_11-20%
_21-30%
_31-40%
_41-50%
_51-60%
_61-70%
_71-80%
_81-90%
_91-100%

tudents graduating from your school this year, wh
have completed a credit-granting course for whic
ter (for programming, word processing, simulatio
quirement? Do not include uses such as drill-and
er guidance.

_0%
_1-10%
_11-20%
_21-30%
_31-40%
_41-50%
_51-60%
_61-70%
_71-80%
_81-90%
_91-100%

Of students graduating from your scho
what percentage will have received at
in the following languages? Please i
language:

Language

339. BASIC

340. FORTRAN

341. Pascal

342. COBOL

343. RPG

344. Logo

345. Pilot

346. APL

347. Other, please apecify _____

During the regular school year, appro
participate regularly in a aupervised
come to the computer center as an ext

348. Number of boys

349. Number of girls

350. Total number of studenta

t what grade level do students in your achool re
ormal instruction in computer usage? Check one:

____K

____1

2

____3

____4

____5

____6

____7

____8

____9

____10

____11

____12

Are the computer facilities in your achool uaed
groups, auch as an adult education or continuing
to teach participants to use or program computer.

____Yea, our facilities are used in this way

____No, our facilities are not used in thia way

____We have no computer facilitiea

How many different staff members at your sc
courses in which computers are used or in v
subject of instruction?

353. _____ Number using computer for teaching and (drill-and-practice, tutorial)

354. _____ Number using computer as subject of it (introduction to computing, programmi puter science)

355. _____ Number using computer aa student tool cessing, data analysis, laboratory exp

356. _____ Number using computer as teacher's aic (record keeping)

Since September 1981, what percentage of th
school have received training in the uae o
Check one in each column:

	Less than 10 hours (357)	10-15 hours (358)	15- hou (35
_____0%	o	o	o
_____1-10%	o	o	o
_____11-20%	o	o	o
_____21-30%	o	o	o
_____31-40%	o	o	o
_____41-50%	o	o	o
_____51-60%	o	o	o
_____61-70%	o	o	o
_____71-80%	o	o	o
_____81-90%	o	o	o
_____91-100%	o	o	o

Which of the following instructional applications
covered by inservice programs offered to staff in
Check all that apply:

_____ Use of computers in teaching and learning (d
and-practice, tutorial, simulations and mode

_____ Computer as the subject of instruction (intr
duction to computing, computer programming,
computer science, data procesaing)

_____ Computer as a student tool (mathemstical cal
tion; data analysis; information gsthering,
storage and retrieval; guidance applications
word processing)

_____ Computer as teacher's aide (developing
instructional materials, record keeping)

_____ Other, please specify _____

_____ None

What percentage of the teachers in your school w
"highly qualified" to teach about computing (inc
and introduction to computing)?

_____ 0%

_____ 1-10%

_____ 11-20%

_____ 21-30%

_____ 31-40%

_____ 41-50%

_____ 51-60%

_____ 61-70%

_____ 71-80%

_____ 81-90%

_____ 91-100%

How many teachers in your school would
to teach computer programming in each

363. BASIC _____

364. FORTRAN _____

365. Pascal _____

366. COBOL _____

367. RPG _____

368. Logo _____

369. Pilot _____

370. APL _____

371. Other, please specify _____

372. _____How many different individuals do

373. How many teachers in your school have
level major or minor or a master's deg

_____Number of teachers

374. How many teachers in your school have
minor, or a master's degree in compute

_____Number of teachers

What grade does your school serve?

_____K

_____1

_____2

_____3

_____4

_____5

_____6

_____7

_____8

_____9

_____10

_____11

_____12

How many students are enrolled in your school?

_____Number of students

How large is the teaching staff in your school?

_____Number of full-time teachers

_____Number of part-time teachers

COMPUTER LITERACY

QUESTIONS FOR TEACHERS

QUESTIONS ABOUT ADMINISTERING COMPUTER-RELATED PO

1. Does your school have written goals for stu

_____Yes, in place

_____Yes, in progress

_____No

_____Don't know

2. Which, if any, of the following courses do
that apply:

_____Introduction to computing

_____Computer science

_____Computer programming

_____Word processing

_____Data processing

_____None of these courses

3. How are computers used to support instructi
Check all that apply:

_____Used for teaching and learning

_____Used for instruction in programming

_____Used as a tool in various subjects an

_____Used for computer-managed instruction

4. In your school are there specific rules tha following? Check all that apply:

_____Protecting equipment from damage

_____Protecting equipment from loss

_____Destroying another person's data

_____Disrupting the operation of the compu

_____Scheduling or sharing equipment

_____Scheduling or sharing programs

_____Copying copyrighted programs

_____Copying other student's graded comput

5. Which of the following are methods or techn school to assess student's skill and knowle topics? Check all that apply:

_____Standardized tests

_____Teacher-made tests

_____Questionnaires

_____Project evaluations

_____Teachers' observations

_____Others' observations

_____Other _____

How influential are the following persons or g
deciding what computer-related courses are to

	Very Influential	In
The Superintendent/School Board	o	
School principals	o	
Computer coordinator/ specialist	o	
Teschers	o	
Psrents	o	
Supervisors	o	
Locsl businesses	o	
Students	o	
Other _____	o	

In your district, who is responsible for each of

	Superintendent	Assistant Superintendent	Principal	Assistant Principal	Computer
Deciding what computer-related skills and knowledge are to be learned by students	o	o	o	o	o
Determining computer-related course offerings	o	o	o	o	o
Establishing budgets for computer-related projects	o	o	o	o	o
Planning staff training	o	o	o	o	o
Implementing staff training programs	o	o	o	o	o
Evaluating and selecting computer hardware	o	o	o	o	o
Evaluating and selecting computer software	o	o	o	o	o
Determining procurement process	o	o	o	o	o
Assigning computer use	o	o	o	o	o
Establishing and enforcing rules pertaining to the equitable, ethical and legal use of computers	o	o	o	o	o
Evaluating student benefits from computer-related programs	o	o	o	o	o
Communicating with parents and school board e co rse					

STIONS ABOUT TEACHING WITH OR ABOUT COMPUTERS

. Do you teach basic concepts about computers such as the relationship between memory, cen and input and output?

_____Yes

_____No

. Do you teach how to develop computer-oriente procedures?

_____Yes

_____No

. Which of the following subject areas do you apply:

_____Art/Graphic Arts

_____Business Education

_____Computer Programming

_____Computer Science

_____English/Langusge Arts

_____Foreign Lsngusges

_____Mealth

_____Home Economics

_____Indust

_____Introd

_____Mathem

_____Music

_____Perfor

_____Physic

_____Scienc

_____Social

30. In which of the following aubject area how computers can be used to solve pro

_____Art/Graphic Arta	_____I
_____Business Education	_____I
_____Computer Programming	_____M
_____Computer Science	_____M
_____English/Language Arta	_____P
_____Foreign Languagea	_____P
_____Health	_____S
_____Home Economica	_____S

31. Do you teach about the aocial implicat job displacement or new job opportunit communications, dependency or increaae

_____Yes

_____No

32. Do you teach about ethical iasuea rela privacy of data, copyright infractions

_____Yea

_____No

33. Do you teach about the general capabil puter uae?

_____Yes

_____No

Do you tesch about the capsbilities and limitsti
lar computer applications you use in clsss?

_____Yes

_____No

I don't use computer applications in clsss

In which of the following computer lsngusges do
ming skills? Check all thst apply:

_____I don't tesch programming skills

APL

_____Assembly Lsngusge

_____BASIC

_____COBOL

_____FORTRAN

_____Logo

_____Pssca1

_____Pilot

_____RPG

Other

How often do you use a computer as sn aid when y
or demonstrsting concepts?

_____Never

_____Rarely

_____Monthly

_____Weekly

_____Daily

37. For which of the following classroom rec
you use a computer as an aid? Check all

_____Attendance

_____Grades

_____Schedules

_____Monitoring instructional progress

_____Individual Educational Plans (IEP'

_____Standardized test scores

_____Other _____

Listed below are some ways teachers use c
Plesae check thoae activities that curren
achool and those sctivities that sre bei

	Uae	Computer Activity
38.		For numerical calculationa
39.		To run aimulations
40.		For instructionsl games
41.		As leiaure time activity snd reward
42.		For student problem solving
43.		For drill-and-prsctice
44.		As a tutor (tesch content)
45.		To demonatrate concepts
46.		To score teata
47.		As sn instructional management aid
48.		As a msterial generator (testa or worksheets)
49.		For information retrievsl
50.		For atudent anslysia of dsta
51.		For word procesaing
52.		For specisl needa atudents
53.		To control laboratory equipment
	Teach	
54.		To teach programming
55.		To teach computer operation
56.		To teach dsts proceasing
57.		To teach hardware & softwsre procedurea
58.		To teach hiatory of computera
59.		To tesch how computera sre spplied
60.		To teach sbout computer careers
61.		To tesch sbout the role snd impact of computera in society
62.		To teach problem solving

From your experience with using computers which of the following have you found to b

A

64. Lack of access to terminals or microcomputers

65. Lack of student interest

66. Low quality of educational software

67. Reallocation of funds to computers from more pressing needs

68. Difficulty with integrating computer-taught skills with the remainder of the curriculum

69. Difficulty with managing student use of computers

70. Lack of teacher or staff training

71. Lack of teacher or staff interest

72. Lack of administrative support

From your experience with using computers which of the following have you found to b

A

73. Providing immediate feedback

74. Having great patience

75. Keeping the learner actively involved

76. Providing self-paced instruction

77. Keeping records of student performance

78. Providing, through simulations, experiences otherwise not possible in the classroom

ch of the following sources of information about
use at least once a month? Check all that apply

___Newspaper articles

___Weekly computer periodicals (such as Infoworl

___General computer periodicals (such as Popular magazine, Consumer Report)

___Educational computing periodicals (such as El Classroom Computer Learning, The Computing Te

___Professional periodicals (such as Math Teache

___Software catalogs

___Regional teacher training centers

___Colleagues and friends

___Formal classes or workshops, including inservi

___"User" or other professional groups

___Electronic data services (such as The Source, EDUNET)

___Magazines delivered on electronic media

___Television/radio

___Other _____

80. Do you belong to a computer teacher
resources?

_____Yes

_____No

81. If yes which type of organization d
apply:

_____National organization of teac
computers

_____State organization of teacher
computers

_____Local organization of teacher
computers

_____Local informal network or use

_____Computer special interest grou

_____Education special interest gr

_____Other _____

82. In which subject areas have you loo
adequate software? Check all that

_____Art/Graphic Arts

_____Business Education

_____Computer Programming

_____Computer Science

_____English/Language Arts

_____Foreign Languages

_____Health

_____Home Economics

From the list of computer-related curricular mate
elect the three that you most need (that is, app
hat are not now available to you).

_____Answer Sheets _____

_____Curriculum guides _____

_____Curriculum outlines _____

_____Data Bases _____

_____Films _____

_____Laboratory equipment and supplies _____

Overheads _____

_____Periodicals _____

_____Problem sets _____

_____Other _____

84. What types of computer-related courses since September 1981? Check all that

_____ Learning a programming language (BASIC)

_____ Learning word processing

_____ Learning computer science

_____ Learning research spplications

_____ Learning data processing

_____ Lesrning business applications

_____ A general introduction to computi

_____ Lesrning about computer software

_____ Learning about computer hardware

_____ Learning authoring languages

_____ Other, please specify _____

_____ None

Where have you received any computer training? apply:

_____University

_____College

_____Vocational-Technical School

_____Community College

_____Community Education Program

_____District Inservice Program

_____Educational Computer Consortium

_____Regional support or training center

_____Computer store

_____Computer camp

_____Industry

_____My training hss been self-taught

_____I have not received any computer trsining

_____Other _____

Are you getting the training you need for your u teaching?

_____Yes

_____No

87. If No, which three of the following
most wsnt to take to help you use co
three only from the following list o

Introduction to Computers in Educati

_____ Computer-managed Instruction

_____ Software evaluation

Computer Science

_____ Advanced programming

_____ Artificial intelligence

_____ Data structures and algorithms

_____ File processing

_____ Information retrieval

Computer Applications in Subject Area

_____ Art/Graphic Arts

_____ Business Education

_____ English/Lsngusge Arts

_____ Foreign Lsngusges

_____ Health

_____ Home Economics

_____ Industrisl Arts

Computer Software Packsges

_____ Accounting

_____ Communications

_____ Data bases

_____ Grsdebooks

_____ Graphics

Which of the following computer resources ar
school?

		Available
.	Card punch	o
.	Card reader	o
.	Color monitor	o
.	CRT or other video monitor	o
.	Floppy disk drive	o
.	Graphics plotter	o
.	Graphics tablet	o
.	Hard disk drive	o
.	Joystick or gsme paddle	o
.	Light pen	o
.	Msgazines	o
.	Magnetic tape drive, including cssette	o
.	Msinframe computer	o
.	Microcomputer	o
.	"Mouse"	o
.	Music board	o
.	Opticsl scanner	o
.	Psper tape punch	o
.	Paper tape reader	o
.	Parallel or serial interface	o
.	Persons to assist	o
.	Printer	o
.	Reference books and manuals	o
.	Telephone modem	o
.	Textbooks	o

Which of the following computer device
or operated?

		Used
115.	Card punch	o
116.	Card reader	o
117.	Color monitor	o
118.	CRT or other video monitor	o
119.	Floppy disk drive	o
120.	Graphics plotter	o
121.	Graphics tablet	o
122.	Hard disk drive	o
123.	Joystick or game paddle	o
124.	Light pen	o
125.	Magnetic tape drive, including cassette	o
126.	Mainfrsme computer	o
127.	Microcomputer	o
128.	"Mouse"	o
129.	Music board	o
130.	Optical scanner	o
131.	Paper tape punch	o
132.	Paper tape reader	o
133.	Parallel or serial interface	o
134.	Printer	o
135.	Telephone modem	o
136.	Voice synthesizer	o
137.	Other _____	
138.	_____I have not used any of these dev	

How often do you personally use the following re
need information regarding how to use a computer

	Often	Som
Manuals supplied by the hard-ware company or publishers	o	
Technical assistance from the vendor	o	
School or district-level technical assistance	o	
"Users" group	o	
Tutorial programs	o	
Friends/colleagues/family	o	
Reference books	o	
Independent technical assistance	o	
Professional periodicals	o	
Commercial periodicals	o	
Local professional organizations	o	

How adequate are the following materials or reso
about computers and computing?

	Not Available	Avai B Inad
Text books	o	
Teacher guides	o	
Films or filmstrips	o	
Video tapes	o	
Video discs	o	
Workbooks	o	
Curriculum guides	o	
Software	o	
O erheads	o	

When initially considering "packaged
tant are each of the following?

| | | V
Impo |
|---|---|---|
| 160. | The reputation of the program | |
| 161. | The purpoae of the program | |
| 162. | The data needed to uae the program | |
| 163. | The equipment needed to run the program | |
| 164. | The "user-friendlineaa" or eaae of use of the materiala | |
| 165. | The author or aource of the program | |
| 166. | Length or complexity of the documentation | |
| 167. | Completeneaa | |
| 168. | Other, please apecify _____ | |
| 169. | _____I do not evaluate computer pro | |

170. Given the computer hardware in your school, kinds of programs are available for you pe all that apply:

_____Simulations

_____Business programs (e.g., spreadsheets)

_____Math or statistics computation

_____Text editing or word processing

_____Tutorial programs

_____Drill-and-practice programs

_____Data base or file management programs

_____Graphics programs

_____Authoring language programs

_____Telecommunication programs

_____Compilers

_____Recreational programs

_____System utilities

171. How many single-user microcomputers or compu have in your classroom?

_____Number of single-user microcomputers

_____Number of terminals

_____Total

172. Outside of your classroom how many microcomp terminals do your students have access to in

_____Number of single-user microcomputers

_____Number of terminals

173. Which of the following changes have occ
uae of computers in clasa?

_____Content of couraea

_____Grouping of studenta

_____Pacing of instruction

_____Pedagogical technique

_____Time for individual attention

_____I do not uae computera in claaa

_____There have been no changea

174. Where do you have acceas to a computer
all that apply:

_____I do not have access to a compute

_____At home

_____At a friend's home

_____At aomeone'a place of work

_____At a college or univeraity

_____At a library

_____Other, pleaae apecify _____

ere have you used the following kinds of program
ckages?

	School	H
counting	o	
thoring	o	
siness	o	
mmunications	o	
mputational	o	
ta base management	o	
ucational	o	
aphics	o	
me management	o	
egrated packages	o	
reation	o	
mulations	o	
readsheets	o	
atistical analysis	o	
ecommunications	o	
lity	o	
rd processing	o	

ch of the following sets of keys on a keyboard
operate by "touch" typing? Check all that appl

___Alphabetic

___Numeric

93. How often do you personally use a word pr
computer dedicated to word processing?

_____Never

_____Rarely

_____Monthly

_____Weekly

_____Daily

94. How long have you personally been using a
or a dedicated word processor (not necess
computer)?

_____I have not used a word processing p

_____Less than one month

_____Two to four months

_____Five months to a year

_____13-24 months

_____More than 2 years

95. For which of the following types of docume
a word processing program or a computer de
ing? Check all that apply:

_____Memoranda

_____Letters

_____Short reports or compositions (up to

_____Long reports or compositions (20 or

_____Other _____

_____Not applicable

ch of the following outputs from a computer progr
uced or had produced for making decisions or sol

	Produced	Have Not Produced
eadsheets	o	o
ta and tables	o	o
hs	o	o
wings	o	o

___I have not produced any of these outputs

which of the following uses in the arts have you
ck all that apply:

___In graphic art expression

___In musical expression

___For creative writing

___For choreography

___Other _____

202. Computers are frequently used to acce
following types of data bases have yo
all that apply:

_____I have not accessed any data ba

_____Career information

_____Bibliographical citations (libr

_____Stock market

_____School or district data (perso

_____Student records

_____National press wire service

_____Electronic bulletin board

_____Computer courseware or other ed

_____Recrestional programs

_____Other _____

203. For which of the following subject ar
for teaching and learning? Check all

_____Art/Graphic Arts _____

_____Business Education _____

_____Computer Programming _____

_____Computer Science _____

_____English/Language Arts _____

_____Foreign Languages _____

_____Health _____

_____Home Economics _____

which of the following subject areas have you
gram for teaching and learning that you, yours
that apply:

___Art/Graphic Arts
___Business Education
___Computer Programming
___Computer Science
___English/Language Arts
___Foreign Languages
___Health
___Home Economics

_____Industrial
_____Introductio
_____Mathematics
_____Music
_____Performing
_____Physical Ed
_____Science
_____Social Stud

which of the following subject areas have you
ogram in teaching? Check all that apply:

___Art/Graphic Arts
___Business Education
___Computer Programming
___Computer Science
___English/Language Arts
___Foreign Languages
___Health
___Home Economics

_____Industrial
_____Introductic
_____Mathematics
_____Music
_____Performing
_____Physical Ed
_____Science
_____Social Stu

206. For which of the following subject area
ized information retrieval syatem (a co
for an activity such as preparing curri
preparing a science project? Check all

_____Art/Graphic Arts	_____I
_____Buainess Education	_____I
_____Computer Programming	_____M
_____Computer Science	_____M
_____English/Language Arts	_____P
_____Foreign Languages	_____P
_____Health	_____S
_____Home Economics	_____S

QUESTIONS ABOUT DEVELOPING COMPUTER PROGRAMS

207. Which of the following activitiea have
with a computer? Check all thst apply:

_____I have not done any of these acti

_____Loaded a program into memory

_____Saved a program on a disk, tape,

_____Named or renamed a program file

_____Listed a program

_____Backed up a copy of a program or

_____Deleted a program from disk or ta

_____Eraaed computer memory

_____Accessed a catalog or menu of sav

_____Run a program

208. In which of the following languages have
Check all that apply:

_____I have not written a program

_____APL

_____Assembly Language

_____BASIC

_____COBOL

_____Other _____

209. What was the length, in lines, of the long
written?

_____0, I have not written a program

_____1-10 lines or 1 procedure

_____11-25 lines or 2-3 procedures

_____26-50 lines or 4-10 procedures

_____51-100 lines or 11-20 procedures

_____101 or more lines or 21 or more proc

210. What is the longest program--written by so
personelly modified, edited, or changed in
would perform a different task?

_____I have never changed a program

_____1-20 lines (approximately 1 screen)

_____21-40 lines (approximately 2 screens)

_____40 or more lines

211. Have you, youraelf, written a compute
the following elements? Check all th

_____I have not written a program

_____Repetition or iteration

_____Conditional deciaiona ("if, the

_____Uae of variables

_____Logical operations

_____Arithmetic operationa

_____Sound output

_____Graphical output

_____Uaing arrays

_____Uaing data files

_____Statementa for accepting input
peripheral device

_____Format atatementa or image atri
on video display, printer or ot

212. Which of the following aourcea of ina
have you experienced? Check all that

_____The input data was inaccurate (

_____The program "rounded off" inapp

_____There was a logical error in th

_____The input data waa called from
(wrong field, wrong variable, e

_____The program waa inappropriate f

_____Other, please apecify _____

_____None

In which of the following subject areas have yo
problem that required organizing a large amount

_____Art/Graphic Arts

_____Business Education

_____Computer Programming

_____Computer Science

_____English/Language Arts

_____Foreign Languages

_____Health

_____Home Economics

_____Industria

_____Introduct

_____Mathemati

_____Music

_____Performin

_____Physical

_____Science

_____Social St

Which of the following aspects of algorithm deve
teach? Check all that apply:

_____I don't teach any of these

_____Hand simulation of an algorithm

_____Ability to recognize basic algorithms (e.g
ing, making lists of things, repeating a t
reached)

_____Algorithm testing by "Worst Case" inputs

_____Design of a set of test data

_____Determine how many arithmetic computation
complete the algorithm

_____Relative efficiency of different algorithm
problem

_____Not applicable

. Which of the following aspects of algorithm
Check all that apply:

_____Flowcharts or other diagrams of algori

_____English (or other) "pseudocode" for pl

_____The concept of subtasks or procedures

_____Top down design ("Consider the whole f

_____Treatment of error conditions (e.g., t

. Do you use a textbook that shows how to deve

_____Yes

_____No

_____Don't know

. Do you teach students to use a text or refer
algorithms?

_____Yes

_____No

_____Don't know

. Do a majority of your computer programming s
one complete user's guide (of any kind) duri

_____Yes

_____No

_____Don't know

_____Not applicable

Which of the following aspecta of documentatio
writing do you teach? Check all that apply:

_____Preparation of outlinea before writing

_____Teacher approval of outlines before writi

Standard components of reference material
_____aummaries, errora, gloaaary, index, etc.)

_____Uae of word proceaaing system to prepare d

_____Peer review of documenta

_____Rewriting and second review by teacher or

_____Not applicable

Which of the following practices for debugging
programa do you teach? Check all that apply:

Teating of amall pieces of a program befor
_____together and tried.

Teating a program by putting in the larges
_____most troubleaome inputs.

Using "debugging" PRINT or output commands
aee where execution ia proceeding and what
variables.

When a real myatery occurs, dividing the p
with output commands, and successively nar
_____location until the error ia found ("Divide

Performance testing of programa: Measure
_____required to proceas varioua amounts of dat

Many achoola use computers for re
studenta and staff. Pleaae anawe
your school usea computera for th
apply:

221. Who uaes the computer:

_____Principal

_____Teachera

_____Special computer personnel

_____Guidance counaelora

_____Secretaries, Clerks

_____Students

_____Other _____

pes of information are maintained in the comput
tudents?

lasses requested

radea received

omeroom aasignment

tandard teat acores

onors

chool enrolled

_____Peraonal

_____Attendanc

_____Claas sch

_____Reaidence

_____Age (Birt

_____Telephone

_____Other ___

pes of information are maintained in the comput
taff?

alary

esidence

ears of service

ducational attainment

urrent grade level of claases

_____Subject a
clasaes

_____School

_____Certifica

_____Other ___

224. What sorts of summary information do yo
the student record system at your schoo

_____Course enrollments

_____Student schedules

_____School or district standardized t

_____Bussing schedules and routes

_____Attendance records

_____Room/building utilization

_____Grade point aversges

_____Class ranks

_____Other _____

225. Which of the following groups utilize c
your school?

_____Administrative personnel

_____Instructional personnel

_____Students

_____Parents

ore deciding to use a computer, people frequent
s that might argue against computer use. Which
e you considered? Check all that apply:

___Equipment acquisition costs

___Equipment-related costs

___Equipment availability (accessibility)

___Hardware maintenance

___Software maintenance

___Software acquisition costs

___Software-related costs

Software availability/accessibility/quality

___Equipment capacity (memory)

Equipment capacity (CPU)

___Textbook availability

___Data gathering costs

___Data storage costs

___Data entry costs

___Programming costs

___Output capabilities

___Other _____

The following adminiatrative tasks may
ly, by a member of your staff, or by ar
indicate, for each task, whether the ta
assistance, without computer assiatance

A

227. Mathematical calculationa, such as thoae uaed in maintaining a checkbook

228. Writing lettera

229. Operating amall appliancea

230. Scoring atudent testa

231. Reporting standarized test scores to parenta

232. Maintaining mailing lists

233. Retaining student recorda

234. Scheduling classes

235. Scheduling tranaportation

236. Performing statistical analyses

237. Constructing individualized instruction plans (IEP'a)

238. Keeping student grades

239. Creating atudent report carda

240. Operating security system

241. Operating air conditioning/heating ayst

242. Operating lights

243. Writing payroll checka

244. Operating a aprinkler (fire prevention or landscape watering) aystem

245. Operating a telephone answering aystem

246. Labor relationa and negotiations

247. Other _____

Which of the following data quality assurance a
done or directed someone elae to do? Check all

_____Eatabliahed categoriea of data to be coll

_____Identified indicatora or measures for dat

_____Obtained data

_____Dealt with miasing data

_____Changed data into a machine-readable form

_____Verified machine data against raw data

_____Conducted range check

_____Examined summary atatistics, such as tota
dard deviationa

_____Other _____

In your school, how often have any of the problems occurred in the past year?

	Problem	Never	1-2 Tir
249.	Intentional equipment damage	o	o
50.	Equipment theft	o	o
51.	Intentional destruction of data	o	o
52.	Unauthorized change of data	o	o
53.	Theft of data	o	o
54.	Copying copyrighted programs	o	o
5.	Theft of passwords	o	o
6.	Intentional disruption of operating system	o	o
7.	Student cheating on computer projecta	o	o

258. In the past year, hsve you been affected b
your school?

_____Yes

_____No

259. If yes, generally how quickly was the erro

_____As soon as it wss noticed (i.e., imm

_____Within one day

_____Within one week

_____In 1-2 weeks

_____In 3-4 weeks

_____It has not been fixed

260. If yes, how much did the error cost?

_____Don't know

_____Less than $50

_____$51 - $500

_____$501 - $5,000

_____$5,000+

261. In the past month, have you hesrd any comp
parents about loss of jobs or curtailment
introduction of computers?

_____Yes

_____No

262. In the past month, have you heard any st
that they are using a computer in their

_____Yes

_____No

263. Have you ever been required to interact
would have preferred to interact with a
machine teller instead of a human teller.

_____Yes

_____No

264. In the past month, how many complaints h
parents or students regarding computer-r

_____None

_____1-3

_____4-10

_____11-20

_____21+

265. Which of the following actions have you t
concerned about the possibility of having
invaded by a computer? Check all that ap

_____Omitting certain information when f
applications

_____Requesting your name be removed fro

_____Declining to provide your social se

_____Complaining to government agencies

_____Writing to a legislator

_____Writing to the editor of a newspape

_____Other _____

6. Which of the following actions have you take
protect the privacy of entries on a computer
all that apply:

_____ Reatricted or limited the data that wa
into the data base

_____ Identified individuals by identificati
names

_____ Stored information necessary to link r
a aeparate location

_____ Periodically purged data

_____ Encoded all data

_____ Reatricted phyaical acceas to terminal

_____ Assigned user "log on" ID to restrict

_____ Encrypted data when tranaferring from

_____ Restricted physical acceas to data car

_____ I have not taken any auch actiona

267. Do you (or any member of your family) hav

_____Yes

_____No

268. If yes, about how many minutes per week d

_____Minutes

If yes, what proportion of the time that
at home is spent in the following ways?

	Computer Use	Pr
269.	Working alone	0%
270.	Teaching someone	0%
271.	Working together with someone	0%

272. If yes, what proportion of the time that
at home is spent in recreational use (eit

_____0%

_____25%

_____50%

_____75%

_____100%

ich of the following operating systems have you
ed?

____CP/M

____Apple DOS3.3

____TRSDOS

____MS-DOS or PC-DOS

____Unix

UCSD-p-system

____Zenix

____VMS

____TSO

____Other _____

____Don't know

____I have not used any operating system

ich of the following data communication equipmen
ipment have you used?

	Used	N U
lem	o	
isl (RS232) or Parallel terface	o	
t	o	
tocol Emulator or Converter	o	

278. Do you teach about how computers' speeds methods for the same jobs?

_____Yes

_____No

_____Don't know

279. Do you teach about approximately how lon week?) it would take a personal computer large business-type computer (such as an sand names alphabetically?

_____Yes

_____No

_____Don't know

280. Do you teach about what things computer the choice of physical computing hardwar algorithm, language in which the algorit

_____Yes

_____No

_____Don't know

281. Do you teach about the relationship amon central processing unit, input/output de devices, and describe the flow of inform

_____Yes

_____No

_____Don't know

2. Which of the following items do you teach st
that they can produce a sentence or psragrs
in relation to other given terms? Check sl

_____Algorithm

_____Artificial intelligence

_____Assembler

_____Batch processing

_____Central processing unit

_____Compiler

_____Computer-aided design

_____Computer-aided manufacturing

_____Computer operator

_____Computer programmer

_____CRT terminal

_____Data base

_____Data entry clerk

_____Data processing

_____Disk drive

_____Higher level langusge

_____Information retrieval

_____In

_____In

_____Ms

_____Me

_____Mo

_____Mc

_____Op

_____Pa

_____R

_____R

_____S

_____S

_____S

_____T

_____T

_____U

283. Approximately how many instructionsl so
tutorials, drill-snd-practice, etc.) ar
teachers to use on microcomputers in yo

_____None

_____1-10 diskettes full

_____11-20 diskettes full

284. If you wanted to use software packages
in your classroom, where would you most
all that apply:

_____State library or software catalog

_____County library

_____District library

_____School library

_____Informal liaison with other teache

_____Other _____

_____I have all the software and materi

_____Not applicable

COMPUTER LITERACY

QUESTIONS FOR STUDENTS

QUESTIONS ABOUT ADMINISTERING COMPUTER-RELATED

1. In your school, are there specific rules t following? Check all that apply:

_____Protecting equipment from dsmage

_____Protecting equipment from loss

_____Destroying another person's data

_____Disrupting the operation of the comp

_____Scheduling or sharing equipment

_____Scheduling or sharing progrsms

_____Copying copyrighted programs

_____Copying other students' graded compu

QUESTIONS ABOUT TEACHING WITH OR ABOUT COMPUTE

2. How often do you use a computer as sn aid demonstrating concepts?

_____Never

_____Rarely

_____Monthly

_____Weekly

_____Daily

Listed below are some ways teachers use or
Plesse check those activities that current
school and those activities that are being

Use	Computer Activity	Cu
3.	For numerical calculations	
4.	To run simulations	
5.	For instructional games	
6.	As leisure time activity and reward	
7.	For student problem solving	
8.	For drill-and-practice	
9.	As a tutor (teach content)	
10.	To demonstrate concepts	
11.	To score tests	
12.	As sn instructional management aid	
13.	As a material generator (tests or worksheets)	
14.	For information retrieval	
15.	For student analysis of data	
16.	For word processing	
17.	For special needs students	
18.	To control laboratory equipment	
	Tesch	
19.	To teach programming	
20.	To teach computer operation	
21.	To teach data processing	
22.	To teach hardware & software procedures	
23.	To teach history of computers	
24.	To teach how computers are applied	
25.	To teach about computer careers	
26.	To teach about the role and impact of cómputers in society	
27.	To teach problem aolving	
28.	Other, please specify _____	

From your experience with using computers in tea
which of the following have you found to be a di

	A Dis-advanta
Lack of access to terminals or microcomputers	o
Lack of student interest	o
Low quality of educational software	o
Reallocation of funds to computers from more pressing needa	o
Difficulty with integrating computer-taught skills with the remainder of the curriculum	o
Difficulty with managing student use of computera	o
Lack of teacher or staff training	o
Lack of teacher or staff interest	o
Lack of administrative support	o

From your experience with using computers in tea
which of the following have you found to be an s

	An advanta
Providing immediate feedback	o
Having great patience	o
Keeping the learner actively involved	o
Providing self-paced instruction	o
Keeping records of student erformance	o

44. What types of computer-related courses
since September 1981? Check all that a

_____ Learning a programming language (
BASIC)

_____ Learning word processing

_____ Learning computer science

_____ Learning research applications

_____ Learning data processing

_____ Learning business applications

_____ A general introduction to computin

_____ Learning about computer software

_____ Learning about computer hardware

_____ Learning authoring languages

_____ Other, please specify _____

_____ None

Which of the following computer resources are ava
school?

	Available	Not Availa
Card punch	o	o
Card reader	o	o
Color monitor	o	o
CRT or other video monitor	o	o
Floppy disk drive	o	o
Graphics plotter	o	o
Graphics tablet	o	o
Hard disk drive	o	o
Joystick or game paddle	o	o
Light pen	o	o
Magazines	o	o
Magnetic tape drive, including cassette	o	o
Mainframe computer	o	o
Microcomputer	o	o
"Mouse"	o	o
Music board	o	o
Optical scanner	o	o
Paper tape punch	o	o
Paper tape reader	o	o
Parallel or serial interface	o	o
Persons to assist	o	o
Printer	o	o
Reference books and manuals	o	o
Telephone modem	o	o
Textbooks	o	o
Voice synthesizer	o	o
Other _____		

Which of the following computer device
or operated?

		Used
72.	Card punch	o
73.	Card reader	o
74.	Color monitor	o
75.	CRT or other video monitor	o
76.	Floppy disk drive	o
77.	Graphica plotter	o
78.	Graphics tablet	o
79.	Hard disk drive	o
80.	Joystick or game paddle	o
81.	Light pen	o
82.	Magnetic tape drive, including cassette	o
83.	Mainframe computer	o
84.	Microcomputer	o
85.	"Mouse"	o
86.	Music board	o
87.	Optical scanner	o
88.	Paper tape punch	o
89.	Paper tape reader	o
90.	Parallel or serial interface	o
91.	Printer	o
92.	Telephone modem	o
93.	Voice synthesizer	o
94.	Other _____	
95.	_____I have not used any of these devi	

How often do you personally use the follow
need information regarding how to use a co

		Often
96.	Manuals supplied by the hard-ware company or publiahers	o
97.	Technical assistance from the vendor	o
98.	School or district-level technical assistance	o
99.	"Users" group	o
100.	Tutorial programs	o
101.	Friends/colleagues/family	o
102.	Reference books	o
103.	Independent technical assistance	o
104.	Professional periodicals	o
105.	Commericial periodicals	o
106.	Local professional organizations	o

When initially considering "packaged" com
tant are each of the following?

		Very Important
107.	The reputation of the program	o
108.	The purpose of the program	o
109.	The data needed to use the program	o
110.	The equipment needed to run the program	o
111.	The "user-friendliness" or ease of use of the materials	o
112.	The author or source of the program	o
113.	Length or complexity of the documentation	o
114.	Completeness	o

115. Other, please specify _____

116. _____I do not avaluate computer programs

117. Given the computer hardware in your scho
kinds of progrsms are available for you
all that apply:

_____Simulations

_____Business programs (e.g., apreadshee

_____Math or statistics computation

_____Text editing or word processing

_____Tutorial programs

_____Drill-and-practice programs

_____Data base or file management progra

_____Graphics programs

_____Authoring language programs

_____Telecommunication programs

_____Compilers

_____Recreationsl programs

_____System utilities

118. How many single-user microcomputers or c
have in your classroom?

_____Number of single-user microcomputer

_____Number of terminals

_____Total

119. Outside of your claasroom, how many micr
terminals can you use in your school?

_____Number of microcomputers

Number of terminals

120. During the school year, when ha
school? Check all that apply:

_____During scheduled class tim

_____Before school or after sch

_____In free periods

_____On weekends, holidays, etc

121. Where do you have access to a c
all that apply:

_____I do not have access to a

_____At home

_____At a friend's home

_____At aomeone's place of work

_____At a college or university

_____At a library

_____Other, please apecify ____

Where have you used the following kinds of p
packages?

		School	H
2.	Accounting	o	
3.	Authoring	o	
4.	Business	o	
5.	Communications	o	
6.	Computational	o	
7.	Data base management	o	
8.	Educational	o	
9.	Graphics	o	
0.	Home management	o	
1.	Integrated packages	o	
2.	Recreation	o	
3.	Simulations	o	
4.	Spreadsheets	o	
5.	Statistical analysis	o	
6.	Telecommunications	o	
7.	Utility	o	
8.	Word processing	o	

9. Which of the following sets of keys on a ke
operate by "touch" typing? Check all that

_____Alphabetic

Numeric

. How often do you personally use a word proces
computer dedicated to word processing?

_____Never

_____Rarely

_____Monthly

_____Weekly

_____Daily

. How long have you personally been using a wor
or a dedicated word processor (not necessaril
computer)?

_____I have not used a word processing progra

_____Less than one month

_____Two to four months

_____Five months to a year

_____13-24 months

_____More than 2 years

. For which of the following types of documents
a word processing program or a computer dedic
Check all that apply:

_____Memoranda

_____Letters

_____Short reports or compositions (up to 19

_____Long reports or compositions (20 or more

_____Other _____

_____Not applicable

Which of the following outputs from a computer
produced or had produced for making decisions o

	Produced	Ha Pr
Spreadsheets	o	
Charts and tables	o	
Graphs	o	
Drawings	o	

_____I have not produced any of these outputs

To which of the following uses in the arts have
Check all that apply:

_____In graphic art expression

_____In musical expression

_____For creative writing

_____For choreography

_____Other _____

omputers are frequently used to access data base
ollowing types of data bases have you personally
ll that apply:

____I have not accessed any data bases

____Career information

____Bibliographical citations (library)

____Stock market

____School or district data (personnel, budget,

____Student records

____National press wire services

____Electronic bulletin board

____Computer courseware or other educational res

____Recreational programs

____Other _____

or which of the following subject areas have you
or teaching and learning? Check all that apply:

_____Art/Graphic Arts	_____Industrial A
Business Education	_____Introduction
Computer Programming	_____Mathematics
_____Computer Science	_____Music
_____English/Lsnguage Arts	_____Performing A
_____Foreign Languages	_____Physical Edu
_____Health	_____Science
Home Economics	_____Social Studi

For which of the following subject areas have you
program for teaching and learning that you, yours
all that apply:

_____Art/Graphic Arts	_____Industrial A
_____Business Education	_____Introduction
_____Computer Programming	_____Mathematics
_____Computer Science	_____Music
_____English/Language Arts	_____Performing A
_____Foreign Languages	_____Physical Edu
_____Health	_____Science
_____Home Economics	_____Social Studi

In which of the following subject areas have you
program? Check all that apply:

_____Art/Graphic Arts	_____Industrial A
_____Business Education	_____Introduction
_____Computer Programming	_____Mathematics
_____Computer Science	_____Music
_____English/Language Arts	_____Performing A
_____Foreign Languages	_____Physical Edu
_____Health	_____Science
_____Home Economics	_____Social Studi

. For which of the following subject areas have
ized information retrieval system (computer d
for an activity such as preparing curriculum,
preparing a science project? Check all that

_____Art/Graphic Arts	_____Industri
_____Business Education	_____Introduct
_____Computer Programming	_____Mathemat
_____Computer Science	_____Music
_____English/Language Arts	_____Performi
_____Foreign Languages	_____Physical
_____Health	_____Science
_____Home Economics	_____Social St

STIONS ABOUT DEVELOPING COMPUTER PROGRAMS

. Which of the following activities have you, y
with a computer? Check all that apply:

_____I have not done any of these activities

_____Loaded a program into memory

_____Saved a program on a disk, tape, or card

_____Named or renamed a program file

_____Listed a program

_____Backed up a copy of a program or file

_____Deleted a program from disk or tape

_____Erased computer memory

_____Accessed a catalog or menu of saved prog

_____Run a program

_____Tested and deb ged a program

In which of the following languages have you w
Check all that apply:

_____ I have not written a program

_____ APL

_____ Assembly Language

_____ BASIC

_____ COBOL

_____ FORTRA

_____ Logo

_____ Pascal

_____ Pilot

_____ RPG

_____ Other

What was the length, in lines, of the longest written?

_____ 0, I have not written a program

_____ 1-10 lines or 1 procedure

_____ 11-25 linea or 2-3 procedures

_____ 26-50 lines or 4-10 procedures

_____ 51-100 lines or 11-20 procedures

_____ 101 or more lines or 21 or more procedu

7. What is the longest program--written by some personally modified, edited, or changed in s perform a different task?

_____ I have never changed a program

_____ 1-20 lines (approximately 1 screen)

_____ 21-40 lines (approximately 2 screens)

_____ 40 or more lines

Hsve you, yourself, written a computer program
the following elements? Check all that apply:

____I have not written a program

____Repetition or iteration

____Conditional decisions ("if, then")

____Use of variables

____Logical operations

____Arithmetic operations

____Sound output

____Graphical output

____Using arrays

____Using data files

____Statements for accepting input from keybos
pheral device

____Format statements or image strings for out
on video display, printer or other periphe

Which of the following sources of inaccuracies
have you experienced? Check all that apply:

____The input data was inaccurate ("Garbage ir

____The program "rounded off" inappropriately

____There was a logical error in the program

____The input data was called from the wrong m
(wrong field, wrong variable, etc.)

____The program was inappropriate for the prob

____Other, please specify _____

____None

hich of the following subject areas have you wo
lem that required organizing a large amount of

Art/Graphic Arts	Industrial Art
Business Education	Introduction t
Computer Programming	Mathematics
Computer Science	Music
English/Language Arts	Performing Art
Foreign Languages	Physical Educ
Health	Science
Home Economics	Social Studie

ch of the following aspects of algorithm develo
died? Check all that apply:

- I haven't studied sny of these
- Hand simulation of an algorithm
- Ability to recognize basic algorithms (e.g., ing, making lists of things, repeating a tas reached, etc.)
- Algorithm testing by "Worst Case" inputs
- Design of a set of test data
- Determine how many arithmetic computations i complete the algorithm
- Relative efficiency of different algorithms problem
- Not applicsble

162. Which of the following aspects of alg
Check all that apply:

_____Flowcharts or other diagrams o

_____English (or other) "pseudocode'

_____The concept of subtasks or proc

_____Top down design ("Consider the

_____Treatment of error conditions (

163. Do you have a textbook that shows ho

_____Yes

_____No

_____Don't know

164. Do you look up algorithms in a text
up your own?

_____Yes

_____No

_____Don't know

165. Have you written at least one comple
during your school career?

_____Yes

No

t know

applicable

6. Which of the following aspecta of documentati
writing have you atudied? Check all that app

_____Preparation of outlinea before writing

_____Teacher approval of outlines before writ

Standard components of reference materia
_____summariea, errora, gloaaary, index, etc.

_____Uae of word processing system to prepare

_____Peer review of documents

_____Rewriting and aecond review by teacher o

_____Not applicable

7. Which of the following practicea for debuggin
programs have you studied? Check all that ap

Teating of small pieces of a program bef
_____together and tried

Teating a program by putting in the larg
_____most troubleaome inputa

Uaing "debugging" PRINT or output comman
aee where execution is proceeding and wh
_____variablea

When a real myatery occura, dividing the
with output commands, and successively n
_____location until the error is found ("Divi

Performance testing of programa: Meaaur
_____required to process varioua amounta of d

Many schools use computers for recording
students and staff. Please answer the f
your school uses computers for this purp

168. Who uses the computer:

_____Principal

_____Teachers

_____Special computer personnel

_____Guidance counselors

_____Secretaries, Clerks

_____Students

_____Other _____

169. What types of information are maintair
about students? Check all that apply:

_____Classes requested

_____Classes enrolled

_____Grades received

_____Homeroom assignment

_____Standard test scores

_____Honors

_____School enrolled

_____Personal profile

_____Attendance

_____Class schedule

_____Residence

_____Age (Birth date)

_____Telephone number

_____Other _____

170. Before deciding to use a computer, peop
factors that might argue against comput
following have you considered? Check a

_____Equipment acquisition costs

_____Equipment-related costs

_____Equipment availability (accessibi

_____Hardware maintenance

_____Software maintenance

_____Software acquisition costs

_____Software-related costs

_____Software availability/accessibili

_____Equipment capacity (memory)

_____Equipment capacity (CPU)

_____Textbook availability

_____Data gathering costs

_____Data storage costs

_____Data entry costs

_____Programming costs

_____Output capabilities

_____Other _____

. Which of the following data quality assurance done? Check all that apply:

_____ Established categories of data to be co

_____ Identified indicators or measures for d

_____ Obtained data

_____ Dealt with miasing data

_____ Changed data into a machine-readable fo

_____ Verified machine data against raw data

_____ Conducted range check

_____ Examined aummary statistics, such as to standard deviations

_____ Other _____

In your school, how often have any of problems occurred in the past year?

	Problem	Never	1
172.	Intentional equipment damage	o	
173.	Equipment theft	o	
174.	Intentional destruction of data	o	
175.	Unauthorized change of data	o	
176.	Theft of data	o	
177.	Copying copyrighted programs	o	
178.	Theft of passwords	o	
179.	Intentional disruption of operating system	o	
180.	Student cheating on computer projects	o	

181. In the past year, have you been a
your school?

_____Yes

_____No

182. If yes, generally how quickly was

_____As soon as it was noticed (i

_____Within one day

_____Within one week

_____In 1-2 weeks

_____In 3-4 weeks

_____It has not been fixed

183. If yes, how much did the error co

_____Don't know

_____Less than $50

_____$51 - $500

_____$501 - $5,000

_____$5,000+

184. In the past month, have you heard
a job or having a job made part-t

_____Yes

_____No

185. In the past month, have you heard
using a computer in their work?

_____Yes

186. Have you ever been required to interact with
would have preferred to interact with a pers
machine teller inatead of a human teller)?

_____Yes

_____No

187. Which of the following actiona have you take
concerned about the poaaibility of having yo
invaded by a computer? Check all that apply

_____Omitting certain information when fill
cationa

_____Requeating your name be removed from a

_____Declining to provide your aocial aecur

_____Complaining to government agencies

_____Writing to a legialator

_____Writing to the editor of a newspaper o

_____Other _____

_____I have not taken any auch actiona

188. Which of the following actions have you ta
protect the privacy of entriea on a comput
all that apply:

_____ Restricted or limited the data that w
into the data baae

_____ Identified individuals by identificat
names

_____ Stored information neceasary to link
a separate location

_____ Periodically purged data

_____ Encoded all data

_____ Reatricted phyaical acceaa to termina

_____ Aasigned uaer "log on" ID to restrict

_____ Encrypted data when tranaferring from

_____ Restricted phyaical acceaa to data ca

_____ I have not taken any auch actions

189. Do you (or any member of your family) ha

_____Yes

_____No

190. If yes, about how many minutes per week

_____Minutes

If yes, what proportion of the time that
at home is spent in the following ways?

Computer Use

191. Working alone

192. Teaching someone

193. Working together with someone

194. If yes, what proportion of the time that
at home is spent in recreational use (e

_____0%

_____25%

_____50%

_____75%

_____100%

STIONS ABOUT UNDERSTANDING COMPUTER-RELATED CON

. Which of the following operating systems hav
used?

_____CP/M

_____Apple DOS3.3

_____TRSDOS

_____MS-DOS or PC-DOS

_____Unix

_____UCSD-p-system

_____Zenix

_____VMS

_____TSO

_____Other _____

_____Don't know

_____I have not used any operating system

Which of the following dats communication eq
equipment have you used?

	Used	N U
. Modem	o	
. Serial (RS232) or Parallel Interface	o	
. Port	o	
. Protocol Emulator or Converter	o	

200. Have you studied any specific details a
compare to non-computer methods for the

_____Yea

_____No

_____Don't know

201. Do you know approximately how long (a mi
would take a personal computer (such as
business-type computer (such as an IBM 3
names alphabetically?

_____Yes

_____No

_____Don't know

202. Have you studied what thinga computer spe
the choice of physical computing hardware
algorithm, language in which the algorith

_____Yea

_____No

_____Don't know

203. Have you discussed the relationahip among
central processing unit, input-output devi
and described the flow of information and

_____Yes

_____No

_____Don't know